

THE ARMED FORCES COMPTROLLER



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THE FINANCE CENTER, U. S. ARMY

Brigadier General Frederick J. Kendall

Located fourteen miles northeast of Indianapolis, capital city of Indiana, is the Finance Center, U. S. Army (FCUSA). The Finance Center is a Class II Activity under the command jurisdiction of the Chief of Finance, Major General Paul A. Mayo. Construction of this new "Home of the Army Dollar" at Fort Benjamin Harrison was begun in 1951 and completed early in 1954. Our primary missions include settlement of claims, disbursement of allotments and retired pay, examination of military pay records, payment of transportation bills, administration of soldiers' deposits and related accounting for these functions. For the first time in Army history the bulk of its financial operations and records are now centralized under one roof.

Like other branches of the Army, the Finance Corps experienced rapid expansion and contraction in the last two decades. During World War II, in addition to a global network of regular disbursing offices it was necessary to establish specialized accounting, allotment, war bond and settlements offices all over the country. Realizing this variety of operations could be handled more expeditiously at a central point after the wartime peak volumes dwindled, the Army vacated rented buildings in major cities and formed the Central Field Fiscal Office in a government owned Ordnance Plant in St. Louis, Missouri. This took place in 1946 and 1947. It was then possible to undertake the closer coordination of allotment payments with disbursing officers' accounts, claims handling and accounting functions through a blending of the former independently administered activities into an integrated organization of interrelated components. Upon completion of the new building these operations were established in the Finance Center at Fort Harrison by the spring of 1954. Meanwhile, Transportation Division and Retired Pay Branch of the Washington, D.C. Finance Office, U.S. Army, and the meal ticket function from Chicago had been transferred to FCUSA.

By its very nature and in consideration of the work performed the building is a highly efficient structure, resulting in several decided advantages. For example, since the various operations have been placed under one roof we are able to settle claims and validate collection accounts more expeditiously, with the pay vouchers and financial histories conveniently available for reference. The association of today's operations with the immediate past records "across the aisle" in the same building is quite a contrast to the transfer of files and time consuming correspondence required when the operations were scattered among several cities.

I mention this background in order that the reader may better understand problems faced in the past and perceive advantages effected by consolidation of these operations in one building. A chart presented with this article depicts only the major components of the Finance Center to provide you,

as later references are made, with a picture of organization structure and relationships.

Apart from the staff elements typical to a command our Finance Center functions are organized into three major segments, termed "operations." Related activities are grouped for efficient management. The improvised chart illustrates the several divisions comprising these operations as now organized.

THREE OPERATIONS

(1) Allotment and Deposits Operation consists of four divisions and is responsible for the administration of the Army allotment and soldiers' deposit programs. (2) Military Pay Operations, composed of four divisions, is responsible for examination and filing of military pay vouchers (MPV's) and reconciles allotment payments with deductions entered on MPV's. (3) Settlements Operations consists of five divisions which process claims and collections cases, maintain accounts of retired personnel, pay certain transportation bills and service financial history files.

ALLOTMENT & DEPOSITS OPERATIONS

The law governing allotments permits a member of the Army to have his local finance and accounting officer deduct a portion of his pay for direct remittance by the Finance Center to his family, bank, commercial insurance company, or other authorized payee. This system provides a continuity of payments despite changes of station by the soldier, duty at remote points, separation from family, or service in combat. The same procedure applies to the purchase of United States Savings Bonds. In return for pay deductions, a bond is issued each month or quarterly. Under the Soldiers' Deposits Plan, enlisted personnel are authorized by law to deposit monies into a trust fund and earn interest at 4% annually.

ACCOUNTS CONTROL DIVISION receives all allotment documents and correspondence on approximately 1,400,000 individual accounts. This includes up to 150,000 allotment change actions per month such as change of address, new "starts" for men coming into the service, and "stops" for men returning to civilian life.

To facilitate control, this division examines and codes all allotment documents. It maintains machine accounting cards for every current allotment and screens change actions against this file as part of the verification procedure for acceptance of new allotments.

INQUIRIES & RECORDS DIVISION answers all inquiries pertaining to allotments and determines the eligibility of parents as dependents for claiming quarters allowance. Incoming letters requiring answers number some 28,000 to 30,000 per month. Specially trained personnel also determine the eligibility of dependents for service benefits, such as their eligibility to

travel at Government expense; and in the case of "secondary" dependents (relative other than wife and legitimate children) their qualification for medical care under the 1956 legislation.

MECHANICAL OPERATIONS DIVISION, as the name implies, is one of the more highly mechanized departments at the Finance Center. A total of 79 machines are used for such diversified tasks as imprinting checks and U.S. Savings Bonds, preparation of vouchers and listing, reproduction of allotment cards, signing checks, and inserting checks and bonds in envelopes and sealing them. An average of 800,000 envelopes are used each month to mail checks and bonds that have a total face value of approximately \$80 million.

Where a considerable number (usually 100 or more) of military personnel have designated one particular insurance company or bank as recipient of their allotments, only one check is issued to the institution covering the entire group of allotments instead of separate checks for each individual.

While volume of checks written remained fairly stable, the bond allotments increased 26% last year to over 160,000 monthly issuances and a like number of quarterly issuances. This trend is continuing.

SOLDIERS' DEPOSITS DIVISION, which can be compared to the savings department of a large bank, maintains and services the records of enlisted members' savings accounts. Nearly 242,600 participants, who collectively have \$38.5 million on deposit, take advantage of this popular thrift plan. The tremendous clerical burden of maintaining all these accounts on an up-to-date basis was facilitated appreciably two years ago when individual deposit records were transferred to magnetic tape for processing on a medium-size electronic computer (Automatic Data Processing System).

MILITARY PAY OPERATIONS

Military Pay Operations is responsible for the receipt and examination of the millions of Military Pay Vouchers (MPV's) processed and paid by Finance Officers throughout the continental United States and overseas areas. This operation continually evaluates the Army pay system and makes recommendations for improvement or streamlining methods of operation and procedures.

CONTROL & PROCESSING DIVISION receives approximately 1 million MPV's each month and from these vouchers certain special items are summarized and reported to the Office, Chief of Finance, Washington, D.C., for budget and statistical purposes.

Wages earned by Army personnel which are taxable under the Federal Insurance Contributions Act (FICA) are reported by the Finance Center to the Social Security Administration. The wage reports are submitted quarterly, each report identifying the individual and showing the wages taxable under FICA for each calendar quarter covered by the report. The estimated FICA tax reported during calendar year 1959 amounted to approximately \$100 million.

RECORDS DIVISION files MPV's in separate "jackets" for each officer and soldier. These files are referred to in providing information requested by the member, Army administrative authorities and other components of the Center. The record folders are maintained in this division during a member's active service; after final separation they are forwarded to the Retained Accounts Division.

EXAMINATION DIVISION verifies items of pay and allowances on all MPV's submitted by finance and accounting offices in the field. The majority of the MPV's cover one month's pay. These vouchers contain detailed information as to accruals and charges incurred by the individual soldier during the period. Finance and Accounting Officers in the field effect adjustments on the member's current MPV upon notification by the Finance Center that an audit of the voucher disclosed an error requiring correction. Error data is collected and evaluated and this information is disseminated to all levels of command to be used for improvement of finance operations within a particular area.

ALLOTMENT RECONCILIATION DIVISION adjust discrepant allotment accounts discovered in the mechanized comparison of allotment deductions from soldiers' pay with the amounts paid by the Finance Center Allotment & Deposits Operations. In processing MPV's a machine accounting card is punched to show allotment deductions entered on each member's voucher. Meanwhile, Allotment & Deposits Operations prepares a card to show its payments for each soldier. Converted to magnetic tape from EAM cards, the ADPS compares allotment payments with deductions and if the amounts are not equal, action is taken to bring them into balance by adjustment notice to the field finance and accounting officer. This includes collection, or refund, depending upon the nature of the account.

SETTLEMENTS OPERATIONS

Settlements Operations takes care of claims for and against the Government. These claims approximate 170,000 per year. Claims against the Government are from service personnel and veterans requesting back pay or travel allowances not received while they were on active duty. Claims in favor of the Government are the accounts receivable; e.g., balances owed by former service personnel from advances of pay, or erroneous payments made to them or their dependents not fully recovered while they were in service.

Included in the varied missions of Settlements Operations are the responsibilities for establishment and maintenance of almost 100,000 pay accounts of retired Army personnel, and payment of bills for transportation services rendered to military and civilian personnel of the Office, Secretary of Defense, Department of the Army, and Department of the Air Force. Over 35 million folders representing the history of the financial accounts of former service members are also maintained and serviced in this operation.

CLAIMS DIVISION processes routine claims for items of pay, allowance and allotments. This division also has the job of making determination on claims submitted by beneficiaries for the back pay of deceased military personnel. Gratuity pay-

ments; travel reimbursements for separated members and their dependents; FHA mortgage insurance premium payments; and claims for the period prior to 1 July 1949 are also taken care of in this division.

COLLECTIONS DIVISION has the responsibility of handling all collections accounts against out-of-service debtors where overpayments are discovered during the regular audit of MPV's. This division also processes all notices of exception concerning in-service and out-of-service personnel.

TRANSPORTATION DIVISION pays carriers for services rendered in transporting cargo and personnel for Office, Secretary of Defense, Department of the Army, and Department of the Air Force. This includes settlement of bills from restaurants for food furnished on meal tickets to soldiers while in a travel status. Net expenditures by this division amount to more than \$50 million monthly, while Government bills of lading, transportation requests and meal tickets handled number some 16 or 17 thousand daily.

RETIRED PAY DIVISION establishes and maintains retired pay accounts for retired Army personnel. Retired pay checks are prepared and mailed by the Finance and Accounting Office based on information furnished that office by this division. At present there are over 100,000 retired members receiving regular payments, and in the past year an average increase of

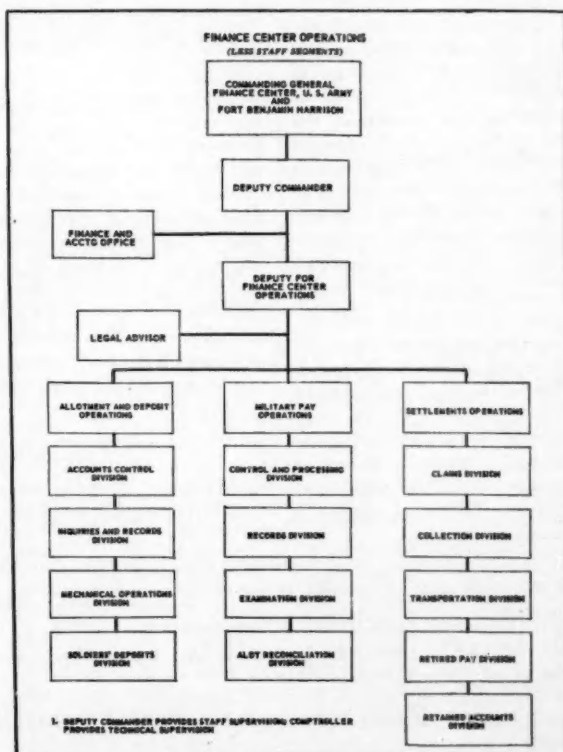
over 500 accounts a month have been noted in this type payment. This division also maintains approximately 1,000 annuity accounts covering annuities being paid to dependents of deceased retired personnel. Authorized allotments for retired personnel are also handled in this division.

RETAINED ACCOUNTS DIVISION maintains the financial histories of military personnel who were in service since 1 July 1949. These records, received by intracenter transfer from divisions in allotment and military pay operations about five months after the member leaves active service, are held readily accessible to fulfill a surprising number of requests for information we receive in subsequent years. At the end of 15 years the records are destroyed. Original accounts of disbursing officers from 1942 to date are serviced under an agreement with the General Accounting Office.

SERVICE IS OUR BUSINESS

Essentially then, the Finance Center is a service organization. Its world-wide clientele includes all members of the Army, their families and many veterans of Army service as well as Department of the Army agencies and major commands.

We are dedicated to rendering finance services in a timely and efficient manner, with constant attention to accuracy and an alertness to new and better ways of getting the "job" done.



FINANCIAL MANAGEMENT IN THE NAVY: 1950-1960

J. Sinclair Armstrong* and Lawrence E. Chermak**

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The United States Navy and the United States Marine Corps with defense as their primary purpose must differ in most respects from private business corporations and from other Government agencies except their sister services. Yet financial management, as a method of assuring more complete use of assets and of measuring performance, has shown remarkable development in the Navy and the Marine Corps during the past decade. There is no doubt that this improved financial management has increased the efficiency of the fighting forces in their constant effort toward ultimate preparedness for all types of war.

War, or even preparation for war, in a social sense, is essentially wasteful. This becomes apparent when defense expenditures are related to the more constructive ends that civilized man could pursue. But in spite of this social waste, we must concede that the demonstration of American resistance to aggression in Korea and the high level of defense activities and expenditures since then have been a substantial contributing cause of the maintenance of peace during the past decade.

Business corporations measure their performance by balance sheets and profit-and-loss statements. It is necessary to match income and expenses for a period to compute the profit of the operation and thereby determine the equity of the shareholders in the business effort of the period. The control of public funds requires a different approach. Management in the Navy must make certain that the usage of the cash asset is for a proper purpose, in a proper amount, during a proper period. Good financial management in the case of private corporations involves techniques quite different from those employed in good financial management in the Government.

The extent of the difference can be seen in the sheer size and range of activity of the Department of the Navy. A few pertinent facts will put the picture of financial management in context. In the fiscal year commencing 1 July 1960, the Navy and the Marines will have 620,000 and 175,000 military personnel respectively on the payroll, and will operate in the active fleet and support activities 817 ships steaming 2,000,000 hours, and 6,000 aircraft flying 2,800,000 hours. The naval forces will

include carrier striking, submarine, antisubmarine, amphibious and mobile logistic support forces. The three Marine Corps Divisions and Marine Corps Air Wings will continue to be vital ingredients of our defense program. All the ships, aircraft and forces will continue to be deployed or maintained in readiness for deployment to potential trouble spots in any part of the world at a moment's notice as abundantly demonstrated by our 1958 landings in Lebanon.

The Navy fiscal problem also differs from that of private corporations in the rate and character of the technical changes in its facilities and equipment, and the rapidity of its obsolescence. Proper preparation for war requires the best ships, aircraft, missiles, and weapons that man can devise, and the best personnel that man can secure and train. Thus, whole concepts of undersea warfare have been revolutionized by the nuclear powered submarine, now being adapted to contribute to strategic deterrence through the ballistic missile firing "Polaris" submarine. Likewise, concepts of limited war capability have been drastically modified by the Marines' vastly improved helicopter borne vertical envelopment doctrine.

Even though the shopping list for military procurement may use the same words today as it did ten years ago, the products purchased are more complex, faster, more automatic and vastly more expensive. The fleet-type submarine at the end of World War II cost \$4.5 million. A "Nautilus" costs about \$50 million, and is three times as expensive to operate. A World War II fighter plane cost \$70 thousand; today, its counterpart costs about \$1.5 million. An "Essex" class carrier cost \$65 million while the nuclear-powered "Enterprise" will probably cost at least \$400 million. These extraordinary cost increases require comparable improvements in cost consciousness and control under competent financial management if this Nation is to defend itself within its resources.

An interesting example of the type of forward, "edge of space," venture into which the Navy must get today, is the world's largest steerable radio telescope, under construction in West Virginia.¹ To build this, the Navy will use 20,000 tons

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(1) McClain, *The 600-foot Radio Telescope*, *Scientific American*, Volume 202, No. 1, 45 (January, 1960).

of steel, 600 tons of aluminum and 14,000 cubic yards of concrete. This instrument of research will be higher than the Washington Monument, more extensive than the Nation's Capitol and as expensive as the world's largest office building—the Pentagon.

At this point many people will ask why would the United States Navy be building this apparatus which has the proportions of the largest pyramid of Egypt and yet is capable of moving its 600-foot reflector a full 360 degrees in a horizontal plane and of tilting it to any angle of elevation from 0 to 90 degrees. These people can only be thinking of the United States Navy as it was in World War II, when the problems of running the Navy did not require operating at the very edges of scientific knowledge. The nuclear Navy with its operation and control through electronic devices—which cannot be adequately described except as “brains”—compels a constant probing into every aspect of the physical and social sciences that have expanded at logarithmic rates during the past decade.

Of course this expanding Navy must continue to be constructed, supplied and maintained, which in itself is a monumental task. The procurement of \$60 billion of goods and contractual services over the past decade is a measure of its extensiveness. The tabulation of the various items obtained would be fabulous for they include wonders as fantastic as the 600-foot telescope just described. The legal problems surrounding this procurement are so extensive that an incident result has been the recent publication of a 1000-page treatise on Navy Contract Law.⁽²⁾ Every major problem of this military department, whether it is logistic, strategic, legal or fiscal, takes on gargantuan proportions.

For the past decade, financial management in the Navy has shown extraordinary growth. The simple reason for this lies in the massive fiscal processes that the cold war has created. Current preparedness of the Navy requires biennial spending in excess of the total naval spending for all the years of its history prior to Pearl Harbor.⁽³⁾ Fiscal problems, which, in earlier years, reached cabinet levels and made history, today must be solved as a matter of normal operations. These singular times demand uncommon effort and skill in this specialized and technical area. A survey of recent fiscal developments has not found these traits wanting.

COMPTROLLERSHIP

Financial management of any public body is circumscribed by both statutory and administrative controls and restrictions. This is particularly true of the Department of the Navy. Not only must it be responsive to standards established by legisla-

tion and by congressional committees, but it must also consider the policies and procedures established by the Treasury Department, the Bureau of the Budget, the General Accounting Office and the Office of the Secretary of Defense. However, this complexity of restrictions has not prevented the progress anticipated with the establishment of an Office of the Comptroller in each military department in 1950.⁽⁴⁾

Congress reorganized the fiscal organization of the Department of Defense by the National Security Act Amendments of 1949 and set the stage for the growth which followed. Under these amendments, the military Comptrollers were given the responsibility for all budgeting, accounting, progress and statistical reporting, and internal audit in their respective departments. Performance budgeting was initiated. Working-capital funds were established. Management funds were utilized. Cross-disbursing was adopted. Property accounting was required. All this was a result of specific requirements of the legislation.

The establishment of a comptroller organization at all levels throughout the Department of the Navy did, of necessity, take much time, effort and training. In addition to the Office of the Navy Comptroller, comptroller organizations were established in the various bureaus and offices to provide coordinated service, advice and assistance in financial management to the bureau and office chiefs. This organization was extended to the field in shipyards, ordnance plants and other major installations. To do this it was necessary to train hundreds of civilian personnel and Navy and Marine Corps officers in Navy Comptrollership at classes conducted by the Office of the Navy Comptroller. Dozens of Navy and Marine Corps officers participated in the advanced degree Navy Graduate Comptrollership Program given at George Washington University.

PERFORMANCE BUDGETING

Performance budgeting occurs with the preparation, presentation and justification of budget estimates before the Congress on the basis of the cost of performance of readily identifiable functional programs. Prior to the use of performance budgets, budgets were initiated on an object basis in which monies were segregated for personal services, travel, material shipment, rent, utilities, printing, supplies, equipment and other similar objects of expenditure.⁽⁵⁾ Budgeting for medical care at hospitals had been done through dozens of budget items rather than through a single hospitalization fund. Performances budgeting eliminated a major portion of the practices characteristic of object budgeting and reporting. Vestiges of this early practice, however, still remain in the reporting requirements continued by Congress. It is quite apparent that budgeting and

(2) Navy Contract Law (2nd Ed., 1959). The Government Printing Office has run off ten thousand copies to meet public demand for this legal work.

(3) Navy spent over 22 billion for the Fiscal Years 1958 and 1959. Expenditures prior to 30 June 1941 totalled 18,689 million dollars. Navy Department, Office of the Comptroller, Financial Report, Fiscal Year 1959.

(4) National Security Act Amendments of 1949, Title IV, 63 Stat. 585 (1949), 5 U.S.C. § 172.

(5) See Budget-Treasury Regulation No. 1, now superseded by Bureau of the Budget Circular No. A-34.

reporting for functions or programs could be made much more effective with the removal of these vestigial congressional requirements.

The Navy pursued performance budgeting after World War II (6) and Congress finally adopted it by cutting back Navy appropriation accounts from 47 titles to 24 titles in 1950 (7) and 10 titles in 1958.(8) The consolidation of these accounts into broader, functional appropriations permits a greater flexibility in the use of funds made available by the Congress. In a period of changing military requirements, funds covering broader authorizations may be programmed through congressional committees before whom the original justifications were made without additional legislation. This freedom of action under congressional direction avoids the loss of valuable production and development time and permits financial management to meet changing defense needs before the next annual budget can be presented to Congress.

Similar legislation has been adopted for the rest of the Federal Government.(9) Currently, the President presents his budget by major functions which in their broadest categories are broken down into (a.) Major National Security, (b.) International Affairs and Finance, (c.) Veteran's Services and Benefits, (d.) Labor and Welfare, (e.) Agriculture and Agricultural Resources, (f.) National Resources, (g.) Commerce and Housing, (h.) General Government, and (i.) Interest.(10) Of these categories, Major National Security takes 57% of the total budget, eight-ninths of which is covered by the military functions of the Department of Defense, the balance being allocated to atomic energy requirements, stockpiling and expansion of defense production, and foreign military assistance.

Within the Department of Defense, military functions are broken down into major categories: military personnel; operation and maintenance; major procurement; research, development, test and evaluation; and military construction.(11) Uniformity among the military departments is sought in a further breakdown of these major categories. This is difficult in view of the differences in organization existing among the military departments due to their difference in assigned missions. However, a functional stratification for comparison purposes has been evolved without the necessity for a reorganization of each military structure. This functional stratification permits the evaluation of the effective use of funds made available for similar purposes and provides a greater uniformity of treatment among the military departments.

The current reorganization of the Navy which resulted in the abolishment of the Bureaus of Aeronautics and Ordnance

and the establishment in their place of the Bureau of Naval Weapons represents the type of organizational change necessary for the bringing together of similar functions.(12) Such permits the development and production of whole weapon systems under single funding plans. Procurement and operations will consequently be made from broader funding authority controlled by the enlarged new bureau.

The National Security Act requires additionally that the programs and activities in a performance budget be segregated on an operating and capital basis. The major classification of the Department of Defense makes the segregation of capital items possible by providing that all major procurement and production, such as missiles, planes, ships, tanks and other similar nonconsumable items be placed in separate appropriation titles. Similar treatment is accorded real estate acquisition and military construction. Research and development has followed the same pattern. Similarly, operating costs are kept separate in military personnel funds and in an operation and maintenance fund. During the past decade the Department of the Navy has been laboriously sorting out the budget functions within these classifications. For the fiscal year 1959, the consolidation of ten annual appropriations into a single operations and maintenance appropriation on a Navywide basis laid the groundwork for further refinements in this area.

COST-BASED BUDGETS

In an effort to bring meaning to the annual fiscal planning which expresses itself in the Department of Defense Appropriation Act, the Congress has adopted legislation requiring all federal agencies to make three primary changes in budgeting and accounting structure and practices.(13) All budgets presented to Congress must show planned costs based upon an accrual accounting system. When these changes become effective, Congress will be in a position to provide annual accrued expenditure limitations on each appropriation made.

The requirement that budgets be placed upon a cost-basis is not new to the Navy Department. It has long been recognized that not only cash but other resources should be included in the annual operating plan. Otherwise, offices and bureaus can operate at a higher consumption rate than budgeted by living off the unbudgeted inventories, undelivered orders, work in process and advances made in prior periods. To some extent this is denied by the working capital funds authorized under the National Security Act Amendments of 1943.(14)

(6) Mosher, Program Budgeting: Theory and practice, 79 (1954).

(7) 64 Stat. 595 (1950).

(8) 72 Stat. 711 (1958).

(9) The Budget and Accounting Procedures Act of 1950 ch. 946, 64 Stat. 832, 31 U.S.C. § 2, 11 (1958).

(10) The Budget of the United States Government for the Fiscal Year ending June 30, 1961. Washington, D. C. (1960).

(11) Department of Defense Appropriation Act, 1960, 73 Stat. 366 (1959).

(12) 73 Stat. 291 (1959).

(13) 70 Stat. 782 (1956), 31 U.S.C. § 11, 18c, 24, 66a, 72 Stat. 852 (1958), 31 U.S.C. § 11 (1958).

(14) National Security Act Amendments of 1949, Title IV, 63 Stat. 585 (1949), 5 U.S.C. § 172.

The Department of the Navy set up working capital funds decades before the passage of these Amendments.(15) In fact, it was the experience of the Navy with these funds that laid the groundwork for their adoption by the Department of Defense. Under the new law, the "Naval Stock Fund" was renamed the "Navy Stock Fund" and a separate stock fund was established for the Marine Corps. These funds are used to finance the procurement of stocks of common-use items. The stocks become available for issue within the Navy, or to any other military department on a reimbursable basis. The inventory can only be used if paid for by the ordering agency, and is not available as a bailout of appropriation deficiencies. With working capital funds, it would not be necessary to include inventories and work in a cost-based budget, since the control lies in the cash usage of the operating appropriation.

Stock funds promote cross-servicing between the military departments and permit a single service to procure for the needs of the remaining military departments. Goods are made available in anticipation of the passage of the consuming appropriations. Reimbursements must be made to the Stock Fund which continues to procure additional inventory to meet the needs of the various ordering activities. With the establishment of these funds, inventory control has tightened. Enormous quantities of material have been catalogued both within and without the fund. Approximately 1,400,000 items of supply have been identified and catalogued. About a quarter of a million items have been added and approximately the same number of items have been dropped, having outlived their usefulness. This has resulted in extending the fund to the financing of an expanding list of new items such as photographic material, ship, electronic, submarine, ordnance, and vehicular equipment repair parts.

The past decade has seen an expansion of the use of the Industrial Fund for financing industrial type activities through a revolving working capital fund. The fund pays for labor, material and overhead costs of work performed at the activity and is replenished from the appropriated funds of the agency ordering the work. This greatly simplifies business procedures and induces the activity to utilize its available facilities most efficiently and economically. Attention is focused on costs, and inventories are kept under control through the use of modern business methods. The unit cost of the items produced aid greatly the review of budget estimates and the management of program costs both within the fund and under contract work for similar items. At present all shipyards, various ordnance plants, public works transportation centers, printing plants, laboratories, the David Taylor Model Basin and the Military Sea Transportation Service are under the Navy Industrial Fund. Dollar savings totalling many millions have been annually reported by the Secretaries of the Navy and Defense as the result of the use of the industrial fund structure.

Adequate budgeting demands the scheduling of production and procurement of military equipment and supplies on an orderly basis. Any annual financial plan must be correlated to procurement and production schedules. This financial plan must consider new obligating authority, expenditure limitations and use of resources. By using modern techniques in budgeting, accounting, auditing, progress reporting and statistics, a periodic checkout of performance is made. Once the budget structure has been established, the primary requisite is an adequate accounting system productive of the facts and reports essential to good financial management.

ACCOUNTING

At the time of the establishment of the Department of Defense, the Joint Committee on Accounting Policy stressed, as the first order of business in the handling and accounting for receipts and disbursements of funds, the revision of appropriation and fund accounting. It recommended the coordination of appropriation and account structure, initiation of cost accounting for financial management usage and establishment of property and inventory accounting.(16) The Department of the Navy had already adopted adequate accounting systems in all these cases. Much of the accounting and disbursing done aboard vessels since the American Revolution was geared to keeping track of cash, supplies and equipment for long voyages. Programming controlled by ship records was a basic consideration for operations of ships unable to rely on support from the sea or foreign lands.

Accounting systems naturally evolve around the type of industry served. In the Navy, where dozens of different industries exist, a variety of accounting systems must be established. In addition to the establishment of uniform accounting procedures throughout the Navy Establishment, modern accrual accounting systems for industrial fund activities in shipyards, ordnance plants, aviation repair shops, printing plants, steamship operations, laboratories, model basins and clothing factories have been established. Simplified accounting systems have been developed for commissioned officer's messes as well as new commercial-type accounting procedures for nonappropriated fund activities such as civilian cafeterias and welfare activities. Resale activities doing an annual business comparable to the largest private counterparts are covered by the Navy and Marine Corps exchanges, commissary stores, and ship stores ashore located overseas. These have accounting systems patterned after their private counterparts. Special accrual accounting systems involving construction work have been instituted. At the other end of the complex logistic action, for the fighting forces afloat a simplified accounting system was created devoid of the treatment normally accorded more intricate business activities.

(15) The Navy Stock Fund under a different name has been in use by the Navy since 1893.

(16) Annual Report of the Secretary of Defense, Fiscal Year 1948, 48.

FUND CONTROL

The administrative control of appropriations and funds requires, under the provisions of the Anti-Deficiency Act,(17) the maintenance of control records at all levels to insure keeping within fund limits. Overobligation or overexpenditure, if done knowingly and willingly, could result in a fine of \$5,000 and imprisonment for 2 years. In addition, Congress redefined obligations which may be recorded.(18) Such compelled a review of thousands of different types of transactions. The result was extensive changes in accounting manuals. Obligation accounting became more detailed and complex. Collateral support had to be obtained by the introduction of commitment accounting. Each shift in the budget structure required parallel changes to keep the accounting system consistent with the manner of budget formulation and presentation. Conversely, as each new working capital fund was established, changes in budgeting were made so that costs of the products stocked or produced were reflected in the respective appropriations of the purchasing bureaus. Accounting practices must constantly change to meet changing budget structures and concepts.

Disbursement of cash is the focal point of expenditure control. This work had been performed by Navy Regional Accounts Offices and Navy Accounts Disbursing Offices and the Navy Finance Center operating under the control of the Bureau of Supplies and Accounts. On November 6, 1958,(19) these offices were transferred to the Office of the Navy Comptroller in order to permit a fuller compliance with Public Law 863 of the 84th Congress and Public Law 85-759. The logical place to operate a Navy-wide accounts payable system would be in the Navy Regional Accounts Offices under Comptroller of the Navy management. These offices are at the most convenient levels for collecting, consolidating and integrating the detailed accounting data generated in support activities ashore and operating units afloat. Reports could be made on a Navy-wide basis and also fed as summary information into the control accounts of the Comptroller of the Navy.

Due to the regulations issued by the Treasury Department and the General Accounting Office,(20) it was necessary to change the fund accountability of Navy disbursing officers. The disbursing operation was streamlined. Disbursing accounts of the Navy Settlement Officer and the Navy Funding Officer were eliminated, as were checking account balances of all Navy disbursing officers and all transfer of funds between disbursing officers. A new "account current" form, together with a new balance sheet and cash book for all Navy and Marine Corps officers, ashore and afloat, was adopted.

The task of cash control is intimately tied into expenditure control which is basic to the balanced budget. Congress does not establish expenditure limits to fit the resources expected to be collected in a particular year. This is the task of the Chief Executive. It is also a major burden of the Department of Defense and its constituent military departments which spend more than half these resources. To accomplish this with some success, all the tools of adequate reporting and advanced statistical techniques are required. Spending patterns of different fund structures must be studied and evaluated as the financing and procurement patterns change. For the past four years the Navy has substantially maintained its expenditure position under the President's Budget. Each succeeding year finds a better use being made of the skills and technology of prediction. In fact, the required information has become more readily available through the progressive installation of automatic data processing equipment.

ACCRUAL ACCOUNTING

The Department of the Navy is currently developing comprehensive accounting plans to synchronize the accrual system required by law with its well-known and long-established property as well as fund accounting. This development must proceed gradually. As indicated earlier, full consideration must be given to the extensive training and indoctrination necessary at all levels of accounting control and record keeping. Each phase must be fully exposed to each level of operation before it can be adopted. Accordingly, the Navy has established its objective and policies on an incremental basis, first midifying its system of fund accounting to assure full compliance, upon adoption of accrual accounting, with the requirements of Public Law 798 of the 84th Congress, Section 3679 of the Revised Statutes and Section 1311 of Public Law 663 of the 83rd Congress. This was done when the Department implemented phase one of its modified system of fund accounting commencing with fiscal year 1958.(21)

Currently phase two of the accounting revisions which deals primarily with the limited aspects of annual accrued expenditures is being re-formulated. With financial property accounting in effect for the bulk of consumable and capital-type material, it should not be difficult in time to establish accrual accounting in the major areas of operations and maintenance, procurement, research and development, and military construction. Modern commercial-type accrual systems have already been installed in all activities financed by working capital funds. In any event, the creation of any accrual accounting system will require that a permanent budget structure be established, as the basis of the accounting support.

(17) Rev. Stat. § 3679 (1957), 31 U.S.C. § 665.

(18) 68 Stat. 800 (1954), 31 U.S.C. § 200 (1958).

(19) Sec Nav Instruction 5430.43 dated 6 November 1958.

(20) General Accounting Office Policy and Procedures Manual for Guidance of Federal Agencies, Title 7, § 7050.

(21) Accounting for Fund Resources at the Allotment Level, NAVEXOS P-1662, dated March 4, 1957.

FINANCING CONTRACTORS

The Department of the Navy may aid the financing of defense contracts through making of progress or advance payments or the guarantee of V-loans supporting this work. Appendix E of the Armed Services Procurement Regulation sets forth the basic contract financing policy and procedures covering these types of financing.⁽²²⁾ In the Navy, the Office of the Comptroller has the responsibility for these functions. The guaranteed loan, progress and advance payments are made primarily for working capital purposes.

Expenditure targets placed on total Navy expenditures necessitate a full consideration of the cycle of financing which may be given to each contract obligated under particular appropriations. The manner and rate of payment determines the flow of expenditures under a specific contract. For this reason, contract payments must be tailored to stay within the expenditure limits established for a particular year. Currently, if progress payments are made, only payments not in excess of 70 percent of costs are permitted. Although advance payments can be made greater than costs incurred, such are limited by regulation. Cost reimbursement contracts cannot, under production contracts, permit payments greater than 80 percent of costs. Each type of contract payment has been sharply curtailed, requiring government contractors to make a fuller use of their own resources during the production period.

The Office of the Navy Comptroller has been active in providing financial support within the level of the expenditure targets established by the President. As of September 30, 1959, more than 730 million dollars of V-loans were authorized under guarantees amounting to approximately 603 million dollars. Advances amounted to about 10 percent of this sum, some 64 million dollars being authorized. Progress payments outstanding continue at a high level with 1,218 million dollars paid. This is, however, less than the progress payments outstanding two and one-half years ago, which amounted to 2,528 million dollars.

The problem of cash flow not only involves payments to contractors but also collections from them. Indebtedness to the Navy from contractors amounted to 58 million as of September 30, 1959. As of this date almost 20 million has been collected by the Comptroller of the Navy. This indebtedness results from renegotiation, price redetermination and adjustments required under contracts. Over the past ten years, the Navy has procured from outside contractors more than 60 billion dollars in supplies and services. Currently, the annual procurement rate exceeds 7.7 billion dollars. This extensive activity is bound to create extensive payment and collection problems.

AUDITING

Internal auditing of the department's monies, physical assets, expenditures and fiscal procedures has been extended and strengthened in the past decade, paralleling a similar growth in private industry.⁽²³⁾ This independent auditing activity is a part of the Office of the Navy Comptroller and evaluates the compliance by the Navy Establishment with established policies, plans and procedures. Auditing covers contract, central, and field audit. On December 1, 1953 the Cost Inspection Service was transferred from the Bureau of Supplies and Accounts to the Comptroller of the Navy and, as the Contract Audit Division, was assigned to a new Assistant Comptroller, Audit, who was also made responsible for the audit of bureaus and offices of the Navy Department, the Headquarters of the Marine Corps, and all field activities.

The military departments have for some years followed a program of coordinating procurement contract auditing in order to eliminate overlapping or duplicating audit at a contractor's plant. To this end a single defense contract audit manual has been issued for use by all three military departments.⁽²⁴⁾ Costs are audited in accordance with the provisions of Section XV of the Armed Services Procurement Regulation as prescribed by the provisions of the applicable contracts.

Effective July 1, 1950 a new Section XV will replace the present section in its entirety.⁽²⁵⁾ In addition to setting forth the general cost principles and procedures for the determinations and allowance of costs under cost-reimbursement contracts, this section also establishes guidelines for the evaluation of costs for pricing certain fixed-priced negotiated contracts and contracts terminated for the convenience of the Government. The explanatory material in the new section is more extensive in regard to allowable and unallowable costs. The changes made were developed over a period of years after considerable industry and Government discussion.

During the past decade the Contract Audit Division in the Office of the Navy Comptroller has taken audit action under tens of thousands of contracts covering tens of billions of dollars. Yearly savings have on occasion exceeded one hundred million dollars. These savings consisted chiefly in disallowances of costs under cost reimbursement contracts, price reductions under audit reports covering negotiation of fixed-price contracts, and audit exclusions under termination settlement proposals.

Internal operations as well as procurement practices have benefited from audit work within the Naval Establishment. Savings are being accomplished through the elimination of duplicate nonessential or overlapping records and reports, disclosure of excess stocks, discovery of errors in billings, charges and other transactions and the development of less costly procedures.

(22) Defense Contract Financing Regulations, issued May 25, 1959 superseding joint regulations dated 17 December 1956; Chermak, Contractor Financing, 18 Fed. B.J. 286 (1958).

(23) The Field of Internal Auditing, The Institute of Internal Auditors, New York.

(24) Contract Audit Manual, NAVSANDA Publication No. 261.

(25) Armed Services Procurement Regulation, Revision No. 50 dated November 2, 1959.

The review of the soundness and adequacy of accounting and fiscal controls affords a constant check on the quality of performance had in the carrying out of assigned responsibilities. Unfortunately, government does not have a shortcut check on efficiency such as is afforded industry by the profit and loss statement. Consequently, the tests of audit must be used to assure efficient and economic operations. Internal auditing does not manage; it furnishes the information which becomes the basis of action by management.

FUTURE IMPROVEMENTS

The work of the Navy Comptroller has been cut out for him under the program for the improvement in financial management in the area of appropriations for Operation and Maintenance.(26) Basic objectives were established which included "improved budgeting and justification of appropriation and apportionment requests, based upon coordinated programming and planning, through the use of information on costs and accomplishments of programs and activities appropriately classified to meet management requirements." This would be supported by "the use of cost-based operating budgets and simplified, more flexible, funding practices based upon such operating budgets." Also, it would require the "use of reports on performance in terms of costs and related program data, especially in relation to operating budgets, and reports on the status of resources."

Under the proposed improvement program it will become necessary to set up operating budgets for each operating unit of each technical bureau within the military department. These operating budgets will be cost based. The President's Budget will only consider the funding requirements of the aggregate of these operating budgets. The operating budgets will report their status to the bureaus, which in turn will use this information to show the aggregate of commitments, obligations and expenditures under each appropriation subhead. The consolidated statement of financial condition of the appropriation as a whole will be derived from the particular information in each operating budget. The consolidated statement need not carry to the military department level the cost controls exercised at lesser operating levels. In fact, the current apportionment and appropriation controls over obligations and expenditures are sufficient for effective controls by the President and the Congress.

For decades the Department of the Navy has issued an annual financial report in the form of a Statement of Assets and Liabilities.(27) This statement is supported by and related to subsidiary statements covering appropriations, costs, inventories and industrial funds. Of interest is a statement of expenditures of the Navy covering each year from 1794 to date. The statements are prepared from the central accounts of a

single integrated accounting system of the Navy and have been reconciled to the official statements published by the Treasury. Recently, the other executive departments have been following this lead. In fact, the Treasury Department and the Bureau of the Budget have considered the need for a balance sheet of the entire United States Government. Even Congress has requested comprehensive data on assets of the Federal Government. This data on assets is now published in the Annual Report of the Secretary of the Treasury.(28) It is not a complete statement of assets since current assets such as cash, accounts receivable, prepaid material, advances and deferred charges are not fully included.

The inventory statements show that the money value of stores was in excess of 14 billion dollars, of which approximately 12 billion was special material not in the stock fund accounts. Most of these special stores consist of equipment and consumable items in the appropriation purchases account. To meet the program for financial improvement in the area of appropriations for operation and maintenance, it will be necessary to transfer the consumable stores from the appropriation purchases account to the stock accounts. Failure to do this will deny the control over these resources that reimbursement to the working capital funds creates. Annual appropriations can measure usage of resources only if the holders of the appropriation are required to pay for the inventory they consume or are limited to the inventory authorized in their operating budget.

In evolving the account structure necessary for the establishment of an integrated maintenance and operation appropriation, the joint purposes of budgeting, programming, planning, accounting and reporting must have a similar segregation and classification of costs. This would permit uniformity among the three military departments for identification of functions and comparison of costs. Budget planning at all levels should benefit considerably by this scheme.

The Department of Defense has set a timetable for the implementation of the policies established in this program. The fiscal year 1960 should find all three military departments developing and installing the first phases of the program. If the accomplishments of the past decade are any measure of the success that may be expected, the assumption of the Department of Defense that the implementation of the required program must be completed by July 1, 1962 is not too visionary. It must be remembered that no program furnishes a grand panacea for financial management problems. Each year will find the Comptrollers tackling new problems with the perpetual unfolding of new programs. The expenditure of 41 billion dollars each fiscal year requires a constant try for the moon in all its phases.

From the above, it must be apparent that the Department
(Continued on Page 26)

(26) Department of Defense Directive No. 7040.1 dated May 29, 1959.

(27) Navy Department, Office of the Comptroller, Financial Report Fiscal Year 1959, NAVEXOS Publication P-1170.

(28) Annual Report of the Secretary of the Treasury on the State of the Finances for the Fiscal Year ended June 30, 1958. 86th Congress, 1st Session, House Document No. 3.

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ACCOUNT AS A JOINT ACCOUNT INDIVIDUAL ACCOUNT

TRUST FOR CHILD

MR. MRS. MISS

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CITY, STATE.....

PLEASE SEND MY.....

SIGNATURE.....

YOUR SAVINGS PASSBOOK AND GIFT CERTIFICATE WILL BE SENT BY RETURN MAIL!

STANDARDIZED ORGANIZATION, INTEGRATED ACCOUNTING AND FINANCE

Colonel George H. Krieger, DCS/Comptroller, Air Training Command,
Randolph Air Force Base, Texas

All Air Force Commands are either in the process of integrating Accounting and Finance, or are laying plans to do so in the very near future. You who have progressed very far in this direction, have probably discovered that this program is divided into two separate facets:

1. Developing necessary technical procedures and systems.

2. Managing the integration effort.

In Air Training Command it is sometimes hard to determine which of these is the most difficult, or which is most vital to the overall success of the program.

In our opinion systems and procedures are more easily achieved. Systems describe a process and provide checks and balances to keep our records accurate, and our people honest. Our experience indicates that we can develop systems to perform any process once we, or the Air Force, have faced up to the fact that a system is required. Of course, in the present instance we had the basic work of the Ent AFB team to build upon.

Managing the overall integration process is another matter. This is a less exacting business fraught with many tangible and intangible aspects, and all mixed up with individual desires, prejudices, and capabilities of people.

Since we have been engaged in this effort for the past year, and have now succeeded in integrating all Accounting and Finance functions within Air Training Command, I feel that some of our experience will be helpful to you who are not yet integrated and may help you who are integrated, but are still plagued with problems not yet solved.

Our management program for the integration of Accounting and Finance included these steps:

1. Develop technical procedures.
2. Develop organization.
 - a. Organization and functional charts.
 - b. Standardized job descriptions.
 - c. Administrative certifying officer positions.
 - d. Qualitative and quantitative personnel requirements.
 - e. Equipment and requirements.
3. Test and refine organization and procedures.
4. Train key personnel.
5. Direct implementation.

I will touch on each of these steps, but will dwell mostly on the organizational aspects of this program.

Develop Technical Procedures: Our basic procedures include much of the material developed by the Air Force team at Ent AFB. We included many refinements which our experience indicated would result in a better end product. We identified areas to be mechanized and developed the necessary ad-

ministrative and EAM technical procedures. Mechanization in the areas indicated on Charts 1, 2, and 3 was made mandatory and standardized products are now flowing through the system.

Our study of the separate Accounting and Finance organizational structure throughout Air Training Command revealed variations of startling proportions. Excessive segmentation, confused and overlapping lines of authority, excessive layering of supervision, and other violations of good management practices were the general rule. Dissipation of effort and lack of adequate overall supervision resulted in excessive manpower requirements. Overtime, although generally accepted in these functions due to normal peaks and valleys in workload, was excessive. Manpower requirements could not be established or validated with any degree of accuracy.

As a result of these findings we reversed our previous policy which permitted a great deal of organizational flexibility at base level. An organizational structure was drawn up, coordinated with base Accounting and Finance Officers, and tested at a model base. The resultant organizational structure has been standardized and made mandatory for all Air Training Command bases (See Chart 4). This structure contains the following features which are considered essential to this function.

1. Strong Military Direction. - The Accounting and Finance Officer, and Chief of the Paying and Collecting Division, as Deputy, are in overall control of the operation. Actually, the Payroll and Travel Division is a bigger job per se than Paying and Collecting, and some of our people thought that the Payroll and Travel Chief should be the Deputy. However, our objective here was to strengthen the overall management of the operation, and the assistance of the Deputy is essential to this objective. He can function as Chief of the Paying and Collecting Division and double as Assistant Accounting and Finance Officer without difficulty.

2. Provides strong professional accounting support and continuous systems development and review capability through the Chief Accountant and Systems Accountant.

3. Assigns responsible positions to qualified people at each level, without overlapping or fuzzy lines of authority.

4. Provides responsible positions for Senior Non-Commissioned Officers. This is a serious problem in Air Training Command. As a result of the Home Front program we are 70% civilianized in this function. Our civilians are getting better and more experienced each year, and our Accounting and Finance Officers are pushing them further up in the organization each year. This is understandable, of course. We are completely in sympathy with the objective of placing highly qualified, stable people in supervisory positions. The unfortunate result is that Senior Non-Commissioned Officers are relegated to minor positions which do not use their capabilities, nor give them an opportunity to gain experience necessary to serve effectively in overseas organizations. To help alleviate this problem

ATC COMPTROLLER MECHANIZATION BASE LEVEL 1 July 1959			
Basic Records			
	Development	Test	Implementation
Allotment Ledgers	X	X	X
General Ledgers	X	X	X
Expense Ledgers	X	X	X
Travel	X	X	X
Commercial Services	X	X	X
Payroll	X	X	X
LP Store	X	X	1 Oct 59
ATO Cost	X	X	
POL	X	X	
LAW	X	X	X

CHART 1

ATC COMPTROLLER MECHANIZATION BASE LEVEL (Continued)			
Basic Reports			
	Development	Test	Implementation
C-31 Supplemental Report	X	X	X
C-31 Status of Allotment	X	X	X
C-99 Trial Balance	X	X	X
C-100 Expense	X	X	X
C-4 Civilian Personnel	X	X	
C-28 Financial Plan	X		

CHART 2

ATC COMPTROLLER MECHANIZATION COMMAND LEVEL 1 July 1959			
Basic Records			
	Development	Test	Implementation
Allotment Ledgers	X		
General Ledgers	X		
Basic Reports			
	Development	Test	Implementation
C-28 Financial Plan	X	X	X
C-31 Status of Allotment	X	X	X
C-99 Trial Balance	X	X	X
C-100 Expense	X	X	X

CHART 3

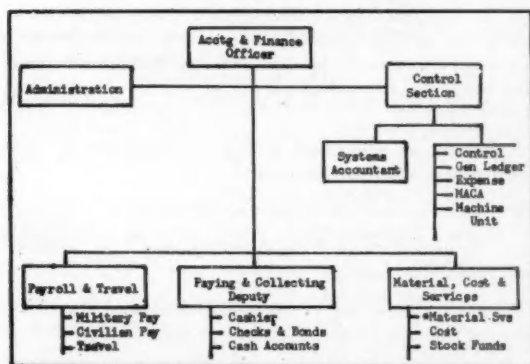


CHART 4

* Administrative Certifiers (two of these NCO's)

we have specified that at least two of the four administrative certifier positions will be filled by qualified NCO's.

5. Provides direct progression from Airman 3rd Class to Senior MSgt, and from GS-3 to GS-12.

6. Provides for the mandatory appointment of the Chiefs of the Military Pay, Civilian Pay, Travel and Material Services Sections as administrative certifiers with complete responsibility for certifying availability of funds and certifying vouchers and

payrolls for payment. The personal responsibilities that Accounting and Finance Officers have had in the past has tended to make these people technicians, rather than managers. For this reason, we have had generally poor supervision and direction of the Accounting and Finance function. The appointment by Special Order of the Chiefs of the pay areas as administrative certifiers has gone a long way toward alleviating this problem. This organizational structure is standard, and is directive on all ATC bases. The only deviation authorized is incremental additions or subtractions based upon workload. For example, in the Airman pay section as indicated on chart 5.

Standardized Job Descriptions: Job descriptions for each position in this organization (military and civilian) were de-

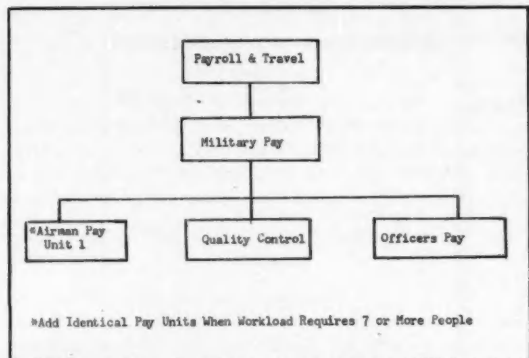


CHART 5

veloped by a team composed of representatives of Civilian Personnel and Comptroller of Headquarters ATC, base Civilian Personnel and Comptroller, and a representative of the Dallas Region of the Civil Service Commission. These people spent several weeks at this task, and the resultant position descriptions were provided each base for use in recruitment and classification functions. Some of the significant advantages resulting from this project are:

1. Complete integration of position descriptions with standard organization and functions.
2. Accurate descriptions without overlapping.
3. Removal of the task of job writing from local Accounting and Finance Officers.
4. Ease of increasing or decreasing the size of the organization by inserting or deleting identical positions.

Qualitative and Quantitative Personnel Requirements: Our initial effort in this regard was the preparation and validation of an adequate manning criteria. Several months study was devoted to this problem. Several workload indicators were examined and discarded as not sufficiently inclusive. As a result of a direct correlation which exists between such indicators as finance work units and total operating cost and total base population we selected total base population, including students and tenants as the basis of our criteria. This criteria was published last December, and has since been subjected to the rigours of skepticism. However, all Accounting and Finance Officers in Air Training Command, except two, have now been convinced that the criteria is basically sound and meets their requirements. Chart 6 reflects criteria presently in effect, and demonstrates incremental changes made necessary by changes in population. The population figures indicated may surprise some of you, but this range is required to meet the needs of Air Training Command bases.

We are now in the process of determining the effect of MACAR, the recent directive concerning military pay accounting, and the final effect of our integrated systems. Updated criteria will be published in the Spring of 1960.

Base Population	Allowance	Base Population	Allowance
2000	144	16000	118
2500	148	17000	122
3000	152	18000	126
3500	156	19000	130
4000	160	20000	134
4500	164	21000	138
5000	167	22000	142
5500	170	23000	146
6000	173	24000	150
6500	176	25000	154
7000	179	26000	158
8000	184	27000	162
9000	189	28000	166
10000	194	29000	170
11000	198	30000	174
12000	202	31000	178
13000	206	32000	181
14000	210	33000	184
15000	214	34000	187

CHART 6

Quality of personnel is a continuing problem, particularly in the professional accountant series. I know your experience has paralleled ours in this regard. Months of advertising for GS-9-12 positions often result in only one application, and the applicant is too often a castoff from some other agency. We are attempting to solve this problem by utilizing Federal Service entrance examination procedures, and have a block of manpower spaces which we will allot to any base that has a college graduate available for hire. The manpower space is available over and above UMD requirements for a 6-month training period, at which time the individual will be placed in a UMD position. A couple of years under this program should alleviate some of our current problems.

In addition, we have directed full use of OJT Packages and Extension Course Institute Correspondence Courses for both military and civilian personnel. We are encouraging all our people to enroll in night classes. All of these actions are designed to:

1. Increase the individual's proficiency and present level of production.
 2. Increase their capacity to earn.
- Refusal of an individual to participate in this program is accepted as evidence of an improper attitude and is reflected in efficiency ratings and advancement.

Equipment requirements were determined by actual test of equipment increments (NCR 31, Intercooler O24 Key-punch) in the model office operation. The number of increments per base was determined by workload, and necessary equipment was acquired by rental agreements processed by Headquarters ATC.

Testing organization and procedures and training key personnel were accomplished in a model office established at Sheppard AFB. Initiating and testing of procedures consumed approximately 3 months. During this period a team of ATC specialists was placed on TDY at Sheppard AFB and all phases of the program were thoroughly tested and revised as necessary. Training Courses were developed and conducted in conjunction with the model office. Each key individual was given a one week course in the job he is expected to perform.

Many of the problems and techniques for solving them which I have described are common to several of the Commands. We realize that there are many ways to approach these problems, and concede the point that ours may not be the one best way. However, our experience has taught us that a standardized system with standardized products must be supported by a standard organization. Any other approach will result in systems deviations with all their inherent disadvantages.

KNOW YOUR OFFICERS

CHAPLAIN (COLONEL) KENNETH M. SOWERS

Chaplain (Colonel) Kenneth M. Sowers is the Director of Administration and Management, Office of the Chief of Chaplains, Department of the Army.

For the year prior to his present assignment Chaplain Sowers was Student Officer with the Student Detachment, Headquarters Military District of Washington, and was stationed at George Washington University. During this time he received a Masters Degree in Public and Business Administration at George Washington University.

Chaplain Sowers began his active military career in May 1941. His first assignment was as Chaplain with the 1229th Reception Center at Fort Dix, New Jersey.

After attending the Command and General Staff College at Fort Leavenworth, Kansas, as a Student Officer, Chaplain Sowers then served as a member of the Staff and Faculty of that College.

During World War II Chaplain Sowers was the Division Chaplain for the 84th Infantry Division. He then was assigned consecutively to Headquarters Panama Canal Department and Headquarters, U. S. Army, Caribbean.

Additional overseas assignments of Chaplain Sowers included chaplain duties at Headquarters, Trieste United States Troops and Headquarters, Seventh United States Army.

Decorations and awards received by Chaplain Sowers are: The Bronze Star Medal with Oak Leaf Cluster; European, African, Middle East Campaign Medal; American Campaign Medal, World War II Victory Medal; Army Commendation Ribbon with Medal Pendant; Purple Heart; National Defense Service Medal; and Army of Occupation Medal (Germany).

Chaplain Sowers was born in Brooklyn, New York. He received his A. B. Degree from St. Stephens College, Annandale-on-Hudson, and was graduated from the General Theological Seminary in New York in 1939. He was ordained an Episcopal Priest at Garden City, New York, in June 1939. He received additional training with the New York Episcopal City Mission Society.

Before entering the Army Chaplaincy, Chaplain Sowers served in the parishes of St. Lydias Church in Brooklyn, New York; Holy Trinity Church in Greenport, New York; and Church of the Redeemer, Mattituck, New York.

Since 1956 he has been lecturer in Business and Public Administration, teaching graduate courses and Executive Performance in Management.

In 1959 Chaplain Sowers was the recipient of the Four Chaplains Award. This Award was presented by Chaplain Alexander D. Goode Lodge B'NAI B'RITH for distinguished service in the field of interfaith relations.

Chaplain Sowers, his wife, and two children reside at 207 Cresswell Drive, Falls Church, Virginia.

TO BUY OR RENT

George Jaffe and Seymour Spector

About the Authors:

George Jaffe reported to the Navy Area Audit Office, New York in March 1941. He was assigned as Technical Assistant for many years and at the present time serves in a dual capacity as Assistant Director, Contract Audit Division and Chief Auditor, Navy Branch Audit Office, Newark. Mr. Jaffe graduated from the New York University in 1939 receiving a B.S. degree in Accounting, and in 1940 became a Certified Public Accountant, New York. He is a member of the American Institute of Certified Public Accounts.

Seymour Spector reported to the Navy Area Audit Office, New York in March 1951 where he performed various audit tasks. At present, he is serving in the capacity of Assistant to the Auditor in Charge of the MAT-D Audit Team. Prior to this he served in the Armed Forces for almost four years. Before his Army service, Mr. Spector was employed as an Economist for another Government agency. Mr. Spector graduated from George Washington University, Washington, D.C., in 1942 receiving a B.A. degree in economics, and in 1951 he received an LL.B. degree from the Brooklyn Law School. He is a member of the New York State Bar.

Management, having reached the decision that a piece of equipment or a building is necessary for the operation of its business, is then confronted with one further decision. Shall that equipment or building be purchased or rented?

In recent years, the traditional pattern of purchase has been disturbed by the rapidly expanding new enterprise of leasing not only machinery and equipment, but also practically anything that is required by management. The concept of leasing is not entirely new but today with a relatively small immediate outlay, business increasingly is coming into possession of all sorts of productive capacity divorced from ownership. It has been estimated that during 1958, \$1.5 billion of capital equipment was leased for use by business. This is almost three times the amount which has been estimated for as recent a year as 1953. Even greater growth is predicted for future years.

The phenomenon which we have been describing generally is not limited to localities, types of business, or products. One California rental firm carries on its shelves, for example, such diverse products as metal beer kegs, tug boats, an aluminum extrusion press, and hotel soap racks. In Florida, a rental company, whose truck leasing operation is reported to have grossed approximately \$60 million in revenue in 1958, is planning to expand its operations into leasing all sorts of equipment including a rolling mill for a steel maker and high priced executive aircraft. In addition to rental companies, nationally known manufacturers have indicated interest in disposing of industrial goods manufactured by them through direct or in-

direct lease arrangements. In this regard, arrangements are being considered whereby diesel locomotives will be made available to users on a rental basis. Manufacturers of aircraft engines have already leased high cost jet engines to airline companies on this basis, and as recently as 10 March 1959, the Pennsylvania Railroad was reported to have leased 2,000 70-ton hopper cars from ACF Industries Inc., American Car & Foundry Division. This is in addition to 2,000 cars purchased outright. In California, a defense contractor leases a substantial amount of electronic test equipment used by its research laboratories. In New York City, a defense contractor leases the machinery it needs in production. A Rockford, Illinois, concern recently leased \$350,000 worth of new machine tools (the first six months' rent, paid on delivery totalled only \$30,000). In Des Plaines, Illinois, a rental firm borrowed \$50,000 from a local bank and used the proceeds of the loan to purchase office equipment which it then leased back to the same bank. The sale and lease-back by the New York Yankee baseball organization of its stadium is known to all fans. Cases along the same lines as the foregoing can be cited endlessly.

What factors have motivated business enterprise to expand the scope and make increased use of rentals as a means of acquiring capital equipment? Various reasons have been advanced and may be catalogued, as follows:

- a. The staggering high cost of capital goods. The president of the aforementioned airline company stated that lease of jet engines reduced the firm's immediate capital requirements by \$80 million.
- b. Revolutionary improvements and even the creation of new technologies, which increase the danger of obsolescence, making ownership of high cost capital equipment extremely hazardous.
- c. The conservation of working capital needed for other corporate purposes.
- d. Reluctance to borrow for capital investment when the amount of credit is limited and needed for other purposes.
- e. The possibility that money can be more profitably invested elsewhere.
- f. Avoidance of investment in upkeep and administration of property, particularly in the case of electro-mechanical devices which require maintenance of a type that the operator cannot ordinarily perform.
- g. The belief by business that existing depreciation rates and methods of recovery are not realistic, whereas the cost of rental is more readily recognized as a business expense for tax purposes.
- h. Lack of need for equipment upon completion of Government contracts.
- i. Limitations to the acquisition of capital equipment imposed by the terms of Government guaranteed "V" loans.

j. Land values may be written off against taxable income, which is not allowed for depreciation purposes.

The disadvantages associated with rentals of equipment are as follows:

- a. Increase in costs and the resulting impact on a firm's competitive position.
- b. No equity is built up.
- c. Equipment cannot be used as collateral for a loan in emergencies.
- d. Necessity of making fixed payments periodically without regard to business conditions.
- e. Inability to renew lease and consequent loss of production capacity.
- f. In today's rising market fixed assets cost more each year. Acquisition of assets now may lead to cost reductions in future years resulting from the present lower purchase cost of equipment.

The type of lease agreement entered into takes various forms. It may contain an option to purchase, in which case the option may be taken up at a price agreed to in advance to approximate the fair market value of the equipment when the option is exercised, or the agreement may provide that, at the time of election, payments heretofore made would be applied as an offset, either total or partial, to the original price of the item. The lease may call for periodic fixed payments or require that rates be based on normal operations or use, plus a surcharge for operations in excess of the normal stated usage. In some instances, rentals may be based on units produced or mileage operated. Some leases stipulate that the lessor is to be responsible for costs of repairs, maintenance, taxes, and insurance. Others impose certain of these obligations on the lessee. The terms of leases are also variable. In the case of mobile equipment or relatively small articles, leases generally are short term. In other cases, the term of the lease is closely related to the useful life of the equipment. In the case of large defense contracts, the term of the lease may coincide with the period of performance of the contract for the reason that the need for leased equipment may not exist after completion of the contract. In this latter case, rental payments may be set at a higher than normal rate. In other cases, a lessee may insist on a short term so that in the event of technological improvements it will not be saddled with outmoded equipment.

In carrying out its responsibilities for determining costs under Department of Defense contracts, the Contract Audit Division, of the Office of the Comptroller of the Navy, has been confronted with many controversial cases concerning the question of allowability of rental costs versus ownership costs. It is not the purpose of this article to go into specifics as to when rentals are reasonable and when they result in unreasonable costs; to question the ultimate wisdom of lease financing; or to determine whether the advantage of using this method to come into possession of an asset rather than by fixing the obligation in the form of interest and a sinking fund covering debentures is an illusion and merely another way to financing debt. We merely wish to emphasize that a problem exists and to point out that when the Government auditor is faced with

the issue there are many factors to be considered. It cannot be said, without qualification, that if a rental agreement results in higher costs to the Government than would have resulted from acquisition, such higher costs, per se, are unreasonable and, therefore, unacceptable. It can be said that a cost is reasonable in amount if it does not exceed that which would be incurred by an ordinary prudent business man under similar circumstances. In support of his position, the Government auditor should first consider whether, as a result of rental payments, the lessee will build up such an equity in the leased item that it is certain that the option to purchase will be exercised. In such case, the transaction should be treated as a sale and all excess rental payments disallowed. The Government auditor also should consider the financial condition of the particular contractor with a view to determining whether the contractor acted reasonably in the circumstances, paying special attention to the sufficiency of working capital, and whether or not leasing has become a fixed policy regardless of the availability of working capital. The Government auditor should recognize that although the award of a Government contract presupposes that the contractor has either necessary facilities or has adequate financing to purchase all of its equipment, this rule is not inflexible. That which constitutes necessary facilities for conducting operations is a question of degree. The Government auditor also should study the nature of the leased item and the period of the lease. Finally, in the determination of whether rental payments are reasonable, the Government auditor should compare such payment with all costs associated with ownership, e.g., depreciation, taxes, insurance, maintenance, etc.

Irrespective of the decision arrived at by the auditor, he has the responsibility of calling to the attention of the procurement agencies concerned the fact that it is the contractor's policy to rent equipment or buildings in substantial amount. This is an area which should receive consideration at the time of contract negotiation. An adjustment may be warranted in the fixed-fee or profit or price to be established commensurate with the nonassumption of investment in facilities on the part of the contractor. In other words, the contractor's profit or fee should vary depending upon the risks taken.

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EXPANDING INTERNAL AUDIT CONTRIBUTIONS TO EFFECTIVE CONTROLLERSHIP

William L. Campfield, Ph.D., CPA

The modern concept of controllership evisions the controller as the principal analyst and correlator of the planning and control instruments of an enterprise. Effective discharge of this responsibility requires careful attention by the controller to the two key aspects of his job, namely:

a. The general management aspects which concern him, along with other members of the top management team, with planning, coordinating, and directing the overall activities of the enterprise.

b. The service aspects which impose a responsibility for supervising the installation and maintenance of "tools of management" such as accounting and reporting systems, flexible budgets, performance standards and measurements, and the like.

The long range profitable conduct of enterprise depends in large measure on appropriate advance planning and recurring review of the profit aspects of every major transaction and business relationship. It is apparent, therefore, that the controller must strive continually to institute and preserve the forward looking features not only of his own department but of all departments throughout the enterprise.

It is well established that internal auditing is one of the major instruments of control by which the controller and other members of management satisfy themselves that prescribed enterprise plans and programs are effectively complied with and enterprise resources are adequately safeguarded. The writer believes, however, that the internal auditing function and the internal auditors of an enterprise can be utilized more fully as a means of extending the effectiveness of controllership in both the general management and the service aspect.

The balance of this paper is devoted to outlining and briefly discussing the framework of expanded audit approach and analysis in three major areas of management responsibility. These areas are: (i) responsibility accounting, (ii) operations controls, and (iii) personnel relations. There are others, to be sure, in which the services of the internal auditor can be fruitfully used.

The discussion deals only incidentally with specific methods and procedures for accomplishing the suggested audit. Major emphasis is placed on ideas and analytical approaches by which controllers may achieve more efficient use of their internal auditors.

Improving Responsibility Accounting

Accounting techniques and procedures have always been aimed at achieving some worthwhile results for management evaluation and control. Accountants and accounting methodology, traditionally, have been useful because they best represent the quantitative approach to the solution of business problems. Over the years, accountants have stated and presented economic relationships in numerical terms so that business trans-

actions and results are less ambiguous and more easily comprehensible to the people who will use them.

The literature of our times attests to the adequacy of the art of accounting in quantifying business relationships. However, accounting typically has been deficient in that data more often than not are served to management *ex poste facto*, and generally only in terms of overall enterprise accomplishments rather than in terms of accomplishments by organizational segments and organizational responsibilities. Many of the conventional accounting records and reports suffer from lack of focus. They fit all purposes poorly and no one too well.

In these circumstances, a controller might use his internal audit staff as intensively as possible to ascertain needed changes in accounting and reporting systems which more nearly serve management's requirements for fixing responsibility for results, and measuring the effectiveness with which management's programs have been carried out.

To be of greatest usefulness to management, an accounting system should provide at least the following: (i) means for collecting and publishing accounting and related statistical information by accountabilities (organizational and personal), (ii) prompt data and reports, and (iii) summarized, comparative reports covering all major elements entering into a company's operations with emphasis on the exceptions, plus or minus, to past averages or standards.

The internal auditor's conventional examinations bring him into close contact 'across the board' with personnel and activities of the enterprise. Consequently, he should be of inestimable aid to the controller in improving the accounting system. First, since an essential concept of control of costs is that of responsibility centers (i.e., organizational units responsible for producing certain revenue and for incurring certain elements of costs), he could help identify those operations susceptible to, but not yet included in the responsibility center concept. He should further identify those existing responsibility centers for which actual responsibility assigned by management is not commensurate with optimum operations. Ideally, a responsibility center should be charged only with those items of revenue and cost for which the head of the organizational unit is responsible. In a less than ideal business world it becomes important, therefore, to appropriately distinguish between controllable and non-controllable operating elements for which a subordinate company official has responsibility. The internal auditor being in a relatively objective position vis-a-vis operating and staff officials should be able to help the controller and other segments of management determine the kind of cost control system and the logical degree of responsibility to be assigned at each center. To illustrate, in an organization in which the research and development division is performing vital military research under tight time schedules it may be less than desirable to charge this division with primary responsibility for incurrence and surveillance of support costs such as repairs and maintenance, supplies,

accounting and similar items.

To be of maximum usefulness to management in decision making and control, accounting data, obviously, must be presented promptly to all responsible individuals in the management hierarchy. There is little need to discourse on the fact that timely investigation and report by internal auditors in respect to delinquency and tardiness of reporting can facilitate corrective action by the controller. One observation in this regard doubtless is fruitful for our discussion. Accounting data and reports are designed to remind management of the consequences of prior decisions. They emphasize the long run and ultimate effects of current operations. Accounting procedures and accounting controls are means of following up and checking on management decisions that have already been made. Consequently, the controller, as custodian of accounting recordation and communication, is well advised to use every objective device to assure that reporting is timely in regard to the efficiency of use of resources as well as to the stewardship or custodial responsibility for resources.

A third and final point with respect to expanded use of internal auditors involves the refinement of accounting controls in terms of measuring and comparing planned operations with actual operations. It is commonplace that efficient analysis of performance is contingent upon a priori establishment of reasonably attainable, flexible standards, and careful analysis of variances between budgeted and actual performance. The internal auditor can be especially beneficial to the controller in helping to establish standards, cost and otherwise, which represent joint agreement as to attainable ideals between the persons whose performance is to be measured and the supervisors who direct and evaluate the performance. Only in this setting of agreed upon standards is performance variance analysis likely to have long run usefulness to management.

In summarizing this portion of the discussion, it is worthy to note that accounting data and accounting systems are likely to be of greatest value to an enterprise management when they are devised and are operative in a way to be used by management to: (i) establish definite responsibility for every item of controllable revenue and cost and performance by individuals charged with specific responsibilities, and (ii) give every responsible level of management a timely and intelligent picture of what is expected of them and provide regular and prompt reports on actual accomplishments as a basis for corrective action where needed.

Because the accounting aspect of management control involves both communication and interpretation of management's plans and programs, the accountant's role in the control function is delicate indeed. The internal auditor working closely with the controller may well serve as the catalyst in bringing line operators and staff officials (including accountants) into close partnership. Competent, analytical control reports emanating from responsible accounting officials may minimize the time required by other management levels for decision and action.

Audit of Operations and Controls

It has frequently been stated simply that management's primary responsibilities are to plan and perform. If we accept this premise, then management's control over performance or operations becomes a pervasive factor of successful enterprise.

The controller in discharging his responsibilities in the general management area can effectively use his internal audit staff in examination and analysis of operational controls. These examinations, currently termed operational audits, are concerned with controls such as manufacturing procedures, systems and methods, work standards, budgets, and a wide range of controls other than accounting.

As a first practical approach the internal auditor should evaluate the adequacy of the controls and tools available to each operating official. Some of the major tools and controls which operating managers use are: (i) work standards, (ii) standing procedures, (iii) reports of performance. Others of importance are organization charts and assigned responsibilities, supervision and training, and communication channels and media.

The auditor's work should be directed to an evaluation of the adequacy and effectiveness of management controls in each area rather than a direct evaluation of the degree of technical ability or judgment required in performing the operational function. The auditor's primary purpose throughout will be assistance to the controller and other management officials in assuring that management objectives are being continuously achieved.

The auditor might start in an operating department by ascertaining what the department head's responsibilities are, not so much in terms of organizational charts and job descriptions but in terms of the requirements in the operating areas where the official actually makes decisions. The auditor could then draw up simplified work routine and flow charts, divide the work into digestible pieces, and study the operations overall sufficiently to isolate the strong and weak points of control. In the course of study the auditor should identify the work standards by which the department head measures his own as well as his subordinates' work. Furthermore, the auditor should determine whether: (i) the standards are consistent with company policies and profit objectives, (ii) the standards are realistic in terms of possible accomplishment by subordinate personnel, (iii) the units of measurement are those commonly used in the industry to measure actual performance, and (iv) the standards are actually used in keeping accomplishments in line with planned or budgeted performance.

As mentioned in the preceding section of this paper, the internal auditor can be of considerable assistance to the controller and other officials in establishing performance standards, cost and otherwise, that are mutually acceptable to managers and the workers who will be evaluated. In the course of this examination of operations the auditor should be able to come up with worthwhile suggestions for making performance standards more effective. Some suggested areas in which he may offer helpful counsel are: (i) improving the units of measurement in which the standards are expressed, (ii) improving the

accuracy, timeliness, and relevance of the standards, (iii) improving the means of communicating the standards to the workers who will be affected by them, (iv) relating the standards more nearly to the operating responsibilities of each individual involved, and (v) helping operating managers to devise useful standards where none exist.

In conjunction with his examination of the accounting and reporting systems of the enterprise, the internal auditor should carefully review the procedures followed in processing operating data. He should ascertain whether there are checks and balances built into the procedures to assure continuous accuracy, promptness, and relevancy in the periodic reports on operations performance. Further, he should determine whether the operating data are classified to pinpoint individual responsibility for performance and whether the operating manager actually uses reports for control purposes.

As in other areas of his operational audit, the internal auditor should be alert to all opportunities for assisting line officials in making better use of operating reports. Some of the areas in which the auditor may constructively advise and assist are: (i) identifying and scheduling pertinent operating data that the manager does not currently have, (ii) pointing out and advising the discontinuance of reports and data that have little or no relation to the operating manager's responsibility, (iii) presenting data in a way to make them easier to read and understand, (iv) rearranging presentation to facilitate comparison of actual performance with standards reflecting current plans, methods, and responsibilities.

Further activity by the internal auditor in the operations control area would embrace study and appraisal of operating procedures in terms of suitability to the operations covered, and consistency with company policies and plans. He would also survey workload in terms of whether it was normal or abnormal in terms of personnel, review productivity to determine whether the trend was up or down and whether measurement was appropriate to existing standards and, review costs and expenses to determine if they are in line with management's predetermined cost levels and profit expectations.

In summarizing this section of the paper, it is well to remind ourselves that among the important phases of management control are the establishment of standards for measuring performance and the determination that performance is carried out in line with predetermined policies, plans, and standards. The controller typically has a responsibility in concert with operating officials to assure that operations are under effective control at all times. The long run profitableness of the enterprise depends in large measure on how effectively this control is maintained.

The internal auditor as an agent of the controller can expand his conventional audit techniques to explore useful means of improving control over operations. In his operational audit he will be primarily concerned with determinations of: (i) the consistency of the various related management policies and procedures, (ii) their adequacy to accomplish assigned functions, (iii) compliance of the organizational units with prescribed poli-

cies, procedures, and plans, and (iv) evaluation of the various management controls for the purpose intended. His approach is one of reviewing formal and other statements of functions, building a model of work routines and work flow so that he can easily comprehend operations, holding appropriate discussions with responsible operating officials, and determining significant areas for test, analysis, and evaluation. Above all he has an over-riding mission to go into operations in quest of an independent evaluation of the effectiveness of management controls. The operations control area is logically within the purview of audit examination since every operating activity has financial implications.

Analysis of Personnel Relations

A management desirous of harmonizing the overall productive potential of its enterprise will make sure that no precarious situations exist in its relations with employees. In similar manner as it seeks assurance of the integrity and efficiency of its financial operations by having periodic financial audits, a management should have planned periodic examinations and evaluations of employee productivity and development. Such audits can aid management considerably in assuring that employee relations are in harmony with the overall objectives of the enterprise. Without reasonably good continuing employee morale and productivity, it is obvious that the long run economic usefulness of the enterprise may be placed in jeopardy. Perhaps as an oversimplified generalization, it may be stated that the key to achieving good employee relations is the motivation of employees to accept the direction and control which management exercises and thus willingly and promptly apply their full skills and efforts to the tasks and duties assigned.

The controller of an organization may find it highly desirable to use his internal audit staff to review and evaluate the following areas pertaining to employee relations: (i) communication methods and supervisory practices, (ii) compensation and pay practices, and (iii) selection and promotion programs. Audit examination of these areas can be correlated very closely with inquiries into operational controls discussed in the preceding section of this paper.

In modern large scale enterprise the communication gap between top management and line employees is extremely wide. Little difficulty is encountered in the mechanical transmission of information, both downward and upward, in the communications flow between various levels of management and line workers. Difficulties and problems occur in the downward flow in respect to whether the important messages get to the people who require them in sufficient time for action and in a form that induces a reasonable meeting of minds all the way down the line as to the meaning of the messages. In the upward communications flow there are greater difficulties and problems because there are many risks that vital information needed by top management will be siphoned off or diluted by various people along the communications line.

In the foregoing circumstances, the internal auditor could aid management through planned recurring test checking of the

methods by which supervisors give orders or explain company policies to workers, of their methods of planning work and assigning job duties, and of the methods used by supervisors on job in instructing and developing their subordinates. Additional communication is achieved in many companies through manuals, house organs, and pamphlets. Spot testing of the extent to which employees have access to and use these media can aid management in concentrating on securing the most effective and economical combination of media for getting its message across to employees.

Other approaches or extension of tests that may be advantageously used by the auditor are:

- a. Determination of whether it is desirable for management to contract the number of channels through which communications presently flow. Concurrently he should identify as many instances as possible where person-to-person oral communication can be effectively substituted for written communication.
- b. Identification of areas and situations in which wider group participation in decision making and communication of decisions will promote efficiency.
- c. As an adjunct to the test of the effectiveness of present communication methods and media, determination could be made of the specific adjustments that should be made to "tailor" communication practices to the varied informational needs of different groups of officials and line workers.

The enterprise's compensation structure and policies should be established on the basis of an objective job or position evaluation system. Pay adjustments should be made in accordance with some relatively standardized merit rating scheme. Surveys have revealed that most employees do not have absolute standards as to the level of pay they require in order to be productive and happy. Instead, they are generally satisfied if the following conditions are met: (i) the pay is reasonably competitive with that offered by alternative employment, and (ii) differences in pay between positions within a company are commensurate with differences in requirements of job skills, training, and responsibility. Periodic examination of the compensation structure and practices should be geared to determinations of whether pay rates are actually in conformance with job evaluations, whether they conform to competitive standards, and whether the merit rating system is being fairly administered. Quick remedial action on the part of management in adjusting rates that are out of line should forestall serious breakdown in employee morale and productivity.

A successful selection and promotion policy depends upon some prior systematic inventorying of present and future job opportunities within the enterprise. A haphazard scheme of

hand-to-mouth filling of positions will inevitably result in stultifying the development of promising employees. A management must devise not only short range plans for utilizing employees but must look beyond and visualize the ultimate responsibilities of as large a group of its employees as possible. In other words, a practical advance program of long range job opportunities must be established as a framework in which employee selection and promotion will be carried on. Obviously, promotion practices must be tied in with practices governing pay and merit rating. Improper methods of recruiting, selecting, assigning, and promoting employees can become a serious friction spot between employees and managers. Hence, an impartial examination of personnel practices in this respect should be extremely helpful to management.

In addition to general inquiry and test in respect to the foregoing, the auditor may find the following to be profitable ways of examining this area:

- a. Determination of the adequacy of applicant screening during the selection process. As a corollary determination, he should ascertain whether present employees are given the first chance to apply for advanced positions.
- b. Determination of whether line officials are given the opportunity to approve or reject an applicant for a job in their departments.
- c. Determination of the adequacy of the job induction program in terms of coverage of company history and organization, policies and rules, products and services, employee benefits, training programs, employee-supervisor relations, and the like.
- d. Determination of the adequacy of the promotion plan in terms of the use made of objective merit rating plans as a basis for consideration of candidates and whether the plan includes and publicizes established steps or line of promotion.
- e. Determination of whether the enterprise has a definite follow-up program to check employee complaints with regard to selection and promotion programs, to ascertain how well employees are getting along on jobs, and to check the effectiveness of supervision in respect to line administration of the selection and promotion programs.

The task of matching the right man with the right job is one of the most important of all management responsibilities. This task can be made easier if management appropriately utilizes planned periodic audits, tests and analyses as a means for assuring that employees are properly selected or promoted on the basis of a reliable job evaluation in terms of job requirements and related required skills.

COMPTROLLER CONFERENCE FOR PRODUCTION-TYPE ACTIVITIES OF THE BUREAU OF NAVAL WEAPONS, OCTOBER 6, 1960, LOUISVILLE, KENTUCKY

Frank E. Stone, Staff Director, Industrial and Cost Accounting, Accounting and Finance Policy Division, Office of Assistant Secretary of Defense (Comptroller)

It is a pleasure for me to participate in this Comptroller Conference for production-type activities of the Bureau of Naval Weapons. As an observer in the Ordnance Plant Seminar held in this city two years ago and again in the Comptroller Seminar for Naval Ammunition Depots last year, I was impressed with the very worthwhile presentations made by personnel from the various activities, the Bureau and the Office of the Navy Comptroller. These seminars overflowed with evidences of ambition to serve management better through improvements in financial and accounting control techniques. And representatives from the various activities demonstrated ample capability to achieve these ambitions.

Similar enthusiasm and capability in comptroller personnel has been observed during visits to industrial and commercial-type activities of the Navy and other military departments. However, despite the many efforts to improve financial management, progress in many of the major industrial activities is disappointing.

When plans for this seminar became known, I was given the opportunity to talk with you about certain important aspects of industrial funds which have not been emphasized adequately in obtaining better management through use of these funds.

There has been great activity in developing and improving accounting techniques at industrial activities for use in the determination of costs of performance. Manuals and handbooks have been published to standardize budgeting and accounting procedures. All three military departments have done a creditable job in improving accounting at industrial fund activities by establishing cost accounting systems integrated with general accounting systems that observe the accrual basis of accounting and employ the double-entry method of bookkeeping. Some progressive activities have taken steps to improve the accuracy of job-order cost accounting through improved time-keeping, identification of the cost of maintaining underutilized capacity and other techniques. A few also have taken steps to improve control of production and overhead costs by development of performance standards, standard cost systems and flexible or variable budget techniques. These efforts deserve great praise.

Some managers have taken an interest in the development of such modern management tools and have used them effectively. These constitute a minority. There are many more managers who regard the industrial fund and techniques associated therewith as an extremely complicated accounting system. They may be *for* or *against* it, according to the prevailing bureau, technical service or departmental position, but they do not perceive that the industrial fund can be any more helpful in the resolution of their management problems than any other single "pot of money," such as an allotment.

A fascinating and frustrating aspect of working with the industrial fund concept is that it has a number of fanatic ad-

herents and about as many fanatic opponents neither of whom appear to be wholly aware of how the industrial fund should operate to motivate for better management. It appears, sometimes, that the most devoted adherents of the industrial fund retard progress in effective application of the concept fully as much as its opponents, and generally for the same reason.

A good foundation for developing an understanding of the purposes of the industrial fund and how it should operate is to review its origin in law and to consider the philosophy of its staunchest promoter, Mr. W. J. McNeil, former Comptroller of the Department of Defense, in his approach to improvement of financial management.

Mr. McNeil was always devising and promoting methods for achieving economy in defense programs. He played a major part in obtaining the legislative authority for use of industrial funds. A major tenet of his philosophy is aptly described in the introduction to a presentation which has been given frequently by members of the Defense Comptroller's staff on "A Program for Improving Financial Management in the Department of Defense." The quotation is as follows:

"In Defense, we must adapt business methods to our operations, as far as possible; we must take advantage of every practicable device in the nature of organizational or financial arrangements to create management incentives and to bring about greater cost consciousness to achieve maximum military strength in relation to cost."

"Financial arrangements should be devised so that human nature will work for this objective, rather than against it."

Mr. McNeil was not an accountant. He dealt with top management in the Department of Defense and was interested in influencing management at all levels to effectively control costs.

It is axiomatic that only management has the power to control operations and thereby control costs. To Mr. McNeil, the industrial fund was an instrument which, properly applied, would create the management incentives which are needed to assure continuing efforts to achieve the desired economy and efficiency.

Before discussing specifically just how proper application of industrial funds can provide incentives for better management, I would like to review briefly how the legislative authority for industrial funds originated.

This history may be "old stuff" to some, but its significance warrants the risk of being boring. As you know, industrial funds and stock funds are the working-capital funds authorized in Section 405 of "Title IV" of the National Security Act of 1949.

"Title IV" also provides for establishment of Comptrollers of the Department of Defense and the respective military departments and prescribes their responsibilities; it requires use of the "performance budget" by the Department of Defense and contains provisions related to obligation of appropriations, management funds and other fiscal matters. The stated purpose of "Title IV" is: "Promotion of Economy and Efficiency Through Establishment of uniform Budgetary and Fiscal Procedures and Organizations." As of now—11 years later—we seem to be making haste very slowly in carrying out this charter.

It may be surprising to some that "Title IV", at least on the record, came about as a sort of after thought in the Congressional consideration of amendments to the National Security Act of 1947.

The original bill reflecting the views of the President charged the Secretary of Defense with, and I quote "performance . . . of all the functions of a head of an Executive Department under "Title IV" of the Budget and Accounting Act of 1921, as amended." Apparently it was hoped that by providing the Secretary of Defense with the same powers as the head of any other department in the Government, he would have the means to effect the necessary reforms in the fiscal and budgetary procedures of the Defense Department.

President Truman's proposals were first taken under consideration by the Senate Committee on Armed Services, chaired by Senator Tydings. In testifying before that Committee, on March 29, 1949, Mr. Ferdinand Eberstadt, the Chairman of the Hoover Commission Task Force on National Security Organization, added this caution:

"Undoubtedly, every provision in the bill will be supported by strong allegations that its passage will guarantee increased economy. As to this I have considerable doubt for organizational changes alone will not effect economies . . . Our Committee made certain recommendations relating to economy and I take the liberty of commending them to your attention. There will be no substantial advances in the field of economy until military budgetary procedures and fiscal policies have been overhauled from top to bottom."

Senator Byrd of Virginia, quick to sense a possibility for economy, asked Mr. Eberstadt if he could prepare specific amendments to the Senate Bill in accordance with the Hoover Report covering the matter of greater economy and efficiency within the Military Establishment. Mr. Eberstadt was promised adequate staff assistance and he accepted the assignment. With the help of Mr. McNeil and several others, "Title IV" was drafted, cleared with the Bureau of the Budget, the Treasury Department and the Comptroller General and submitted to the Senate Armed Services Committee within five weeks. The speed with which this piece of legislation was prepared, cleared and submitted to the Committee is a modern marvel. It sometimes takes longer to answer a letter in the Pentagon.

It is of interest that Senator Byrd and some other Committee members made it clear that they would not vote for any National Security Act Amendments that did not include specific provisions for achieving economies.

Thus, "Title IV", including provision for industrial funds, was made a part of the law for the purpose of aiding the Department of Defense in achieving economies and efficiency. As to how the use of industrial funds could help toward these objectives, Mr. McNeil put it very briefly in testifying on the proposed legislation before the Senate Committee on Armed Services, in these words: "It would put industrial type and commercial type activities on a business basis similar to private industry."

The phrase "a business basis similar to private industry" indicates how the industrial fund concept should operate. In business, the principals are "buyers" and "sellers." The "buyers" negotiate with "sellers" to obtain the greatest possible benefit from the dollars they have available. The "sellers" produce goods and services for "buyers". Each conducts his part of business in a manner which he deems will best serve his own interests. The "buyer", of course, is in control because he determines what goods and services are to be ordered and how much he is willing to pay for them. If the "seller" can not satisfy the demands of the "buyer", he may suffer loss. In private industry the need to meet demands of the "buyer" compels the "seller" to take all steps possible to produce efficiently and economically.

This is an oversimplification of how the business basis operates in private industry. And it is agreed that the "buyer-seller" relationship between Defense industrial activities and their customers is not completely analogous to such a relationship in private business; some of the elements are missing. Yet this relationship has real value in those remaining elements, which will be described later, in promoting the efficiency and economy that originators of "Title IV" had in mind.

In line with Mr. McNeil's program for improving financial management in the Department of Defense the industrial fund is a business-like arrangement, devised so that human nature will work for the objectives of efficiency and economy to achieve maximum military strength in relation to cost.

Regulations governing industrial fund operations, issued by the Secretary of Defense pursuant to authority of "Title IV", list in considerable detail the purposes and specific objectives of industrial funds. A key section of the regulations establishes the method of ordering work or services from industrial activities, providing among other things, that:

1. The terms and conditions for pricing project orders set forth in the Department of Defense directive on project orders shall apply to all orders accepted by an industrial fund activity, and
2. Any order, when accepted by the performing activity, shall serve as the basis for obligation of appropriate funds of the ordering agency in the same manner as provided for purchase orders or contracts placed with private establishments. It is further required that orders placed with an industrial fund activity will not be subject to accounting and reporting requirements similar to those applicable to allotments.

Implementation of the policies established for use of industrial funds and project orders is expected to result in the creation and recognition of "buyer-seller" relationships between the industrial activities and those operating units and agencies which require and order the end-products or services. Each order, like a contract, will represent agreement on specifications as to the items, or services, and quantity that will be produced for delivery within a stated time period at a price which is either fixed and final or is a ceiling on the customer's liability for reimbursement of costs. Such a contractual relationship will stimulate management of both the ordering activity and the producing activity to effect economies and improve efficiency. Without it, there is not sufficient justification for use of industrial funds.

On the customer side of this arrangement, it is expected that any operating unit or agency which required and orders services from an industrial-fund activity will have an allotment to finance payments for the cost of items and services ordered. The customer will obtain no services or materials free from an industrial or commercial activity.

Under these conditions, the customer must consider the costs of fulfilling his requirements—the same as when buying from private firms. There are rarely sufficient funds to accomplish all the requirements of a military program. Therefore, when the operating unit or agency has to manage with the limited allotment at its disposal, its manager is forced to be cost-conscious and economical in what he orders and to order only items and services for which he has real need; he is expected to be critical of purchase prices, that is, the cost estimates of project orders, and to drive a hard bargain with the industrial activity.

When the officials responsible for direction of an operating unit are required to budget, control and account for the cost of the materials and services ordered by them, they have to plan and manage effectively. And having control of the funds required to pay for what they order, it is expected these customers will command better service, because they need not rely on the industrial activity, or some other operating unit, having sufficient funds to supply their needs.

This is in contrast to the practice of allotting funds to a performing activity in amounts sufficient for the support of a prescribed staff level and then endeavoring to order work into the activity on a priority basis and in such a manner as will effect economical and effective operation.

There should be no allotments at industrial-fund activities to pay for costs of production or primary mission services of the activity. Where such allotments exist, it indicates weakened financial control by the customer agency and creates excessive accounting and reporting in abortive attempts to regain adequate control. Military department experience in financial management is replete with examples of how financial control is inhibited by excessive and unnecessary subdivisions of fund resources.

Before leaving the customer side to discuss the producer side of the industrial-fund concept, it should be pointed out

that this business-like arrangement supports the performance-budgeting concept. It enables consumer agencies to budget and account on an "end-product" basis, which simplifies budget presentations, budgetary control and accounting procedures. The customer agencies are freed from the necessity of budgeting and accounting under appropriations for the labor, material and other elements in the cost of production. This relieves them from the complex burden of budgeting and accounting for two completely different viewpoints within the same appropriation. Furthermore, the use of price lists, tariff schedules and firmly priced orders enables the customer agencies to plan and budget more confidently, thus facilitating more effective use of appropriations.

The operations of the Military Sea Transportation Service, Military Air Transport Service and printing plants in the Navy and Air Force have stimulated improved management on the customer's side as well as within these service activities. There is plentiful evidence that customers are examining their needs for overseas shipping and transportation and printing carefully from the viewpoint of economy.

Experience with industrial fund operation shows that there is not adequate incentive for improved management of an industrial activity unless its customers take a proper interest in managing their own programs and exert pressure through the contractual relationship for good service at acceptable prices. Where customers take their responsibilities seriously and use project orders or other orders in the manner required by regulation, the management of the producing activity is compelled to seek reliable methods of estimating and controlling costs.

The requirement for reliable, sound cost estimates in response to customer demands stimulates a whole series of management improvements. Management of the industrial activity must turn to development of standards to indicate what the costs should be and provide control devices for measuring performance. Costs of jobs, services, functions, processes and operations must come under objective study. Top management efforts to control performance and costs in response to pressure from customers will influence every level of supervision, and "cost consciousness" will become a habit. Inefficiencies that are easily obscured in a "level-of-effort" type of management control are smoked out when jobs or services are performed to meet price as well as quality and quantity specifications.

The objective of the contractual arrangement in the industrial-fund concept is to influence management of industrial and commercial activities of the Department of Defense in the same way that management in business is influenced by demands for price-setting and cost control. Introduction of industrial fund financing without establishing an effective contractual relationship between the producer and his customers will provide no lasting management benefits. It may provide a technically correct accounting system which management may admire in awe and the accountants might adore but eventually be abandoned as unrelated and unessential to the management function.

Let us make no mistake about this point. It is not industrial fund financing or the accounting system which provides

incentives for better management to obtain economies and efficiency. They will do no more good than will directives which require development and use of techniques to improve management without providing adequate incentive for continuing efforts for improvement. After the newness wears off, the objective is apt to be forgotten. But where the contractual relationship required by the industrial-fund concept is put into practice, management is impelled to improve. Where the "buyer-seller" relationship is effective, you will find that management puts pressure on the industrial engineer, the management engineer, the accountant and other staff assistants to give him modern management tools to use.

There is another feature of the industrial fund concept which should create incentives for better management. Working capital from the industrial fund provides the financial authority and flexibility required by management of an industrial activity to procure and use manpower, materials and other resources effectively. However, the working capital is limited, and management must look to a flow of revenue from customers adequate to maintain working capital in a solvent and liquid condition.

Revenue may be obtained only through performance on customer orders. To ensure an adequate flow of revenue well into the future, management of the industrial activity must negotiate for firm orders as far in advance as possible. Efforts must be made to keep a full "orderbook". It is expected that through these efforts customer agencies will be queried on their long-range plans. This is how the need for revenue is expected to stimulate forward-looking financial planning.

The insistent queries of industrial activities concerning plans of customer agencies should bring about improvements in program planning and scheduling at each successive, management level. Benefits resulting from satisfying this demand for improved programs at the customer and departmental level cannot be overemphasized.

Improved forward planning will allow better scheduling of operations at the industrial activity. Management should seek the economies and efficiency that can be obtained from a stable work force. However, when forward planning indicates that customers' orders will generate a change in work-load, management should vary the labor force and inventories in order to control costs in line with workloads. It is expected that operating budgets, developed to express management plans financially, will be used as control devices to keep management informed on performance in relation to plans. Uncompleted orders on hand and forecasts of anticipated orders should be the basis for a realistic operating budget.

Briefly, it has been shown that incentives for better management are created by two factors inherent in the industrial fund system, namely—the effective contractual relationship required between consumer and producer—and the dependence of the producer on revenue to replenish his working capital.

To improve management and operations of activities financed under industrial funds, primary emphasis must be placed upon developing buyer-seller relationships with their customers.

This also should be the principal criteria for utilization of industrial funds.

Customers of industrial-fund activities (meaning those who require and order the services) must be required to budget, control and account for the cost of the goods and services they order. There must be instilled in the officials of these agencies a greater sense of responsibility for consideration of the costs of their requirements and of their responsibility as critics of prices and costs of the industrial-fund activities that produce to satisfy these requirements. Serious negotiations to establish prices in advance of performance for services in a project order are required to generate strong incentives for cost control and better management.

In this connection, the Department of Defense regulations governing the use of project orders have been designed to establish more clearly and effectively the contractual aspects of a buyer-seller relationship. We will continue exerting influence to require that these policies and principles be practiced.

Before closing, it is appropriate to indicate that no major extension of the use of industrial funds is presently anticipated except for aircraft overhaul and repair activities in Navy and Air Force, and depot maintenance activities in Army and Marine Corps. Extension of industrial funds to these activities should occur as progress in implementation of the program for improvement in financial management in the area of appropriations for operation and maintenance brings realization that it is needed.

Discussion of industrial funds, stock funds and other types of financial systems should always be conducted with the full realization that each system is only a part of a larger integrated financial management plan for the whole Defense establishment. Progress in implementation of one part of the overall financial management plan must be integrated with implementation of other elements of the system.

The budget program for major overhaul and repair in the operation and maintenance appropriations is expected to be a procurement-type program. It is expected that budgeting and programming will be integrated, and that program managers (meaning those operating units and agencies that require and order overhaul and repair services) will be funded to enable them to buy the services. They will be the customers of the overhaul and repair activities, such as shipyards and aircraft overhaul and repair facilities. Overhaul and repair services will be procured from private concerns by means of contracts and from defense operated facilities by means of project orders. Project orders should be used in ordering production, modification, alteration, overhaul, or maintenance of ships, aircraft, missiles, other weapons, vehicles, etc., from a Government-owned-government-operated establishment in a similar manner.

When the requirements for improved management of the major overhaul and repair program under operation-and-maintenance appropriations are generally understood, the contribution of industrial funds in this area will be appreciated.

The Bureau of the Budget has perceived the advantages of the use of industrial funds for financing aircraft overhaul and

repair where planning, programming, and budgeting for the end-services or work performed is integrated in operating units such as the Fleets and Aviation Supply Office. The Office of the Secretary of Defense concurs with the Budget Bureau view and has so advised the Navy.

There are other areas where lack of general understanding of financial management requirements has resulted in advocating use of industrial funds in situations where we believe they are not justified and, in fact, may impede management improvement. It is expected that progress on plans for improvement of financial management in the area of central supply activities and of research, development, test and evaluation will lead to

a better understanding of the inappropriations of industrial funds to management of these programs.

I hope this discussion will contribute to a perspective of the industrial fund concept that will help in understanding the purpose of efforts emanating from the Office of the Secretary of Defense to bring about practices that are in accord with policies contained in Department of Defense regulations governing use of industrial funds and project orders.

Effectiveness in application of the industrial fund concept should be measured by management deeds in achieving improved financial management.

FINANCIAL MANAGEMENT IN THE NAVY 1950 - 1960 (Cont'd)

ment of the Navy as well as the remaining departments must evolve a budget and accounting system differing from that employed by industry. Military financial management, to be efficient, must create accounting systems fitting the requirements of its military ends, not merely imitate industry's practices.(29) Suiting the system to the purposes to be served should be the

primary guide. Accounting must furnish reports meaningful to management if costs are to be controlled and funds to be employed wisely. The overall purpose of industry is to make a profit. The overall purpose of defense is to be ready for any foreseeable war. Readiness and profit cannot be measured by the same systems of cost determination.

(29) Chermak, Fitting Accounting Technique to Purpose, XIX Pub. Admin Rev. 173 (Summer, 1959).

FIFTH NATIONAL CONVENTION

Plan now to attend the Fifth Annual Convention of The American Society of Military Comptrollers to be held at noon Thursday, 21 September and Friday 22 September, 1961 in room 5A-1070, of the Pentagon, Washington, D. C.

LINE OF BALANCE

Mr. A. C. Gehring, Office of Naval Material

ABOUT THE AUTHOR

The author, Mr. A. C. Gehring, is Head of the Engineering Section of the Navy's Office of Naval Material in Washington, D.C. Previously he worked with the Inspectors of Naval Material at Cincinnati, Fort Wayne, and Atlanta.

One of the major problems facing top executives of industrial enterprises and military departments today is the need for effective management techniques to monitor the progress of programs. In civilian programs top management must have a means available for coordinating the various phases of operation. Similarly, those who are responsible for the various aspects of readiness of the Fleet must know whether or not equipment will be delivered on time or, if not, how late. Executives must be able to foresee shortcomings and predict future inadequacies in order to take steps to short-circuit them or otherwise minimize their effects. Such decisions in turn require the knowledge of whether or not current progress of individual segments of the task is in phase with the schedule for overall completion. If this is to be done with any certainty, there must be devices available which will indicate graphically the status of programs and thus enable top management to make these necessary decisions.

HOW THE NAVY USES LINE OF BALANCE

For more than ten years the Navy has been using and further developing a programming technique called Line of Balance. The Navy has applied Line of Balance to several hundred production programs involving procurement contracts with private industry as well as to a good many of its internal industrial operations. At the present time Line of Balance is monitoring more than 110 production projects. These cover a wide variety of equipment, of which an appreciable portion are electronic items and weapon system components.

The Office of Naval Material has coordinated development and growth of the use of Line of Balance in the Navy. It counsels and guides the various bureaus, activities, and offices of the Navy in Line of Balance work. At the present time Chief of Naval Material has a Line of Balance Team comprised of the following:

- a. Specialists on his own staff;
- b. Specialists in each of the Offices of Supervising Inspector of Naval Material (SUPINSMAT); and
- c. Personnel in each Inspector of Naval Material (INSMAT) Office.

The specialists in ONM and the SUPINSMATS can provide assistance and guidance on all phases of Line of Balance work. In addition, the more than one hundred persons at INSMATS who are experienced in this work can perform studies upon request.

WHAT IS LINE OF BALANCE

Line of Balance is a means for measuring current progress against planned objectives—where the program *is* with respect to where it *ought to be*. Therefore, it serves as a means of reporting and as a method of communication between interested parties. It resembles a newspaper headline in that it causes the reader to recognize important matters by purely visual means.

Line of Balance employs the principle of exception. When properly used, it deals with only the principal factors of a program plus those which may be considered to be limiting, even though not principal. Thereby the non-essential or unimportant information is screened from that which is really basic and which actually needs monitoring. Herein lies the crux: That Line of Balance is a management tool and not a control system, for most control systems consider all factors regardless of their importance or bearing on the program.

Line of Balance flashes the spotlight on shortcomings or deficiencies in progress which reveal to the top executive those factors of the program which are out of step with the overall objectives. This enables him to determine what must be done to avoid delays or to minimize the effect of such shortcomings and to determine who must accomplish the action.

A LINE OF BALANCE STUDY

A Line of Balance study considers four basic elements: First, the objective of the project; Second, the program itself—the physical steps which must be accomplished in order to achieve the objective; Third, a statement of current progress through the steps of the plan; and, Fourth, a comparison of the program progress to the objective.

A Line of Balance study consists of deriving the pertinent information and data involved in these elements, accomplishing each one by one, and then expressing all of this intelligence on one chart. Figure 1 is a very simple hypothetical Line of Balance chart showing surveillance of a production type program resulting from a military procurement contract and involving the repetitive manufacture of an end item.

The first phase is to determine and set down the objective, which in this case is the contract delivery schedule. If this schedule is unrealistic or otherwise not attainable, the contractor's best prediction can be used as an objective. The objective is set down by plotting cumulatively the number of end items required per unit of time. If deliveries have commenced prior to the date of study, they should also be plotted on the objective chart. Obviously in the case shown in Figure 1 the delivery requirements are: Five end items in December, three in January, seven in February, five in March, ten in April, etc. Correspondingly the deliveries so far have been: Five in January, two in February, four in March and three in April.

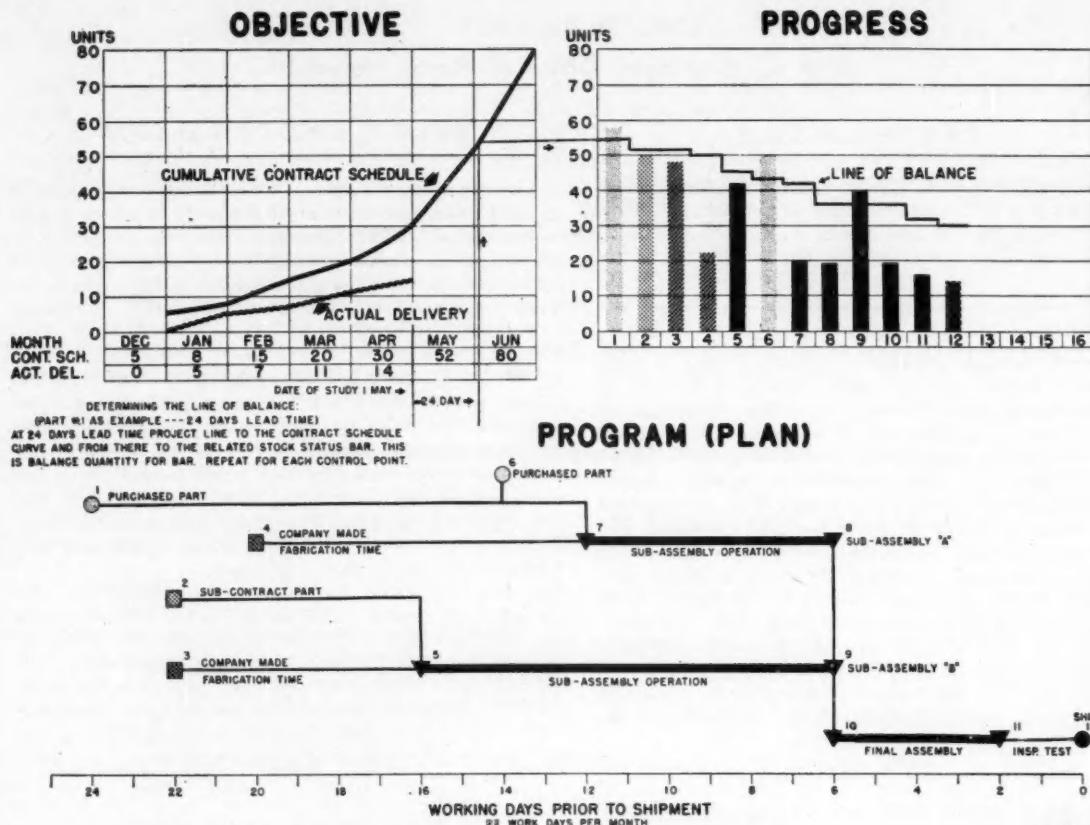


FIGURE 1

Immediately an analysis of the objective chart yields some general intelligence. For example, the horizontal difference between the two curves shows how many months the project is behind schedule. The vertical lag shows how many end items the project is behind. The difference in slopes shows the lag in production rate.

The second phase of the study is to determine and set down the program—the series of limiting and/or principal steps which must be accomplished in order to achieve fabrication of the end items. Again in a production program this is a chart of the basic steps in the production process based upon a time scale of working days, weeks, months, or years. The easiest way to study and sketch the plan is to start at the point of shipment or delivery and move backwards setting down each of the principal or limiting steps in the process in terms of working time prior to shipment (lead time) that each must be accomplished. The symbols are numbered from left to right, the longest lead time steps having the lowest numbers. When two symbols have the same lead time, numbering is from top to bottom.

The overall design of the program is the most difficult task of the study. Determining the points or elements which should be monitored and establishing the proper lead times for each require considerable understanding and talent. The more elements selected for monitoring, the greater the resulting sensitivity, but on the other hand the more complicated and intricate the plan. Similarly, the task of deciding which steps or

elements are principal and/or limiting requires considerable competence and prudence. Whether or not an individual study turns out to be useful and reliable depends very strongly on the quality of design of the program. The program is the heart of this technique.

The third phase is to determine and plot the progress as of the date of study. This is accomplished by inventorying the stock status of parts and assemblies or sub-assemblies that have gone through the various steps in the plan. These are counted in terms of end item sets and then reflected graphically on the progress chart by bars keyed by number and color or shading to the elements of the plan. For example, in Figure 1, sufficient of the purchased part delineated by bar number 1 are available for 58 end items. This is inclusive of all that have been used as of the date of study as well as those not yet used but available. When desired, particularly on in-plant manufacturing, it may be advisable to use an outline bar (not shaded or colored) to indicate the number of parts virtually completed. This information is helpful in analyzing the Line of Balance chart, for it indicates partial completion of a quantity of parts which otherwise would not be shown if only the number of parts one hundred per cent completed were indicated.

The fourth phase is the consummation of the study. In formal terms it consists of correlating program progress with the objective. In more simple language it consists of striking

the Line of Balance, which indicates what the level of each bar should be in order that the program be on schedule at present and keep on schedule in the future. If each bar on the progress chart came exactly to the Line of Balance, the progress through each step of the program would be in perfect equilibrium with the objective. In actual practice this theoretical result is almost never achieved; however, in some cases it is approximated.

The Line of Balance is arrived at as follows: The line is a series of steps, each of which is a balance quantity for an individual bar or element on the progress chart. Each of these levels is arrived at in identical fashion. First, the lead time for the particular element is picked off from the program. This lead time is plotted to the right of the study date on the objective chart. A vertical line is constructed as of the augmented date and extended until it strikes the objective line; then a horizontal line is plotted until it reaches the bar in question. This gives the balance quantity for that bar or element. To illustrate: On Figure 1, element number 1 is a purchased part which must be available 24 working days prior to the time it goes out the shipping door as part of a completed end item. This information is derived from the nature of the symbol and its position on the plan. Accordingly, twenty-four working days are plotted to the right of the 1 May study date on the objective chart. Note that all times used in this technique are working periods and that a normal working month consists of twenty-two working days. A vertical line is then plotted intersecting the objective schedule at approximately fifty-four end item sets. This quantity is projected to bar number 1 on the progress chart to indicate a balance quantity of fifty-four end item sets for number 1. As indicated earlier, this process is repeated for each successive symbol. By successive updating, frequently at one month intervals, you get a moving picture of actual progress as compared to the desired progress.

INTERPRETING LINE OF BALANCE CHARTS

The process of interpreting the information conveyed by Line of Balance charts is a relatively simple one. The customary procedure is to observe jointly the status of the bars on the progress chart as compared to the balance line and coordinate this observation with the information on the program. The normal method is to work backwards starting at the end of the process and work towards long lead time items. In Figure 1: Bar number 12—the shipment is behind schedule—in fact, badly so (of course, this is also obvious from the objective chart). According to the plan, shipment follows test and inspection, which in turn follow final assembly—points 10 and 11 on the progress chart. These are also far behind schedule. The start of final assembly, point number 10, is dependent upon the completion of subassemblies A and B delineated by points 8 and 9. Inasmuch as bar number 9 is above the Line of Balance, obviously the chief contributing factor to delinquency is subassembly A (Bar 8). The start of the subassembly operation for A commences at point 7 and finishes at point 8. Both of these are badly behind schedule also. Subassembly A is fed by two purchased parts, 1 and 6 respectively, both of which are fairly close to being in balance; however, this subassembly is also fed by a company-made part (number 4), which is badly

delinquent. By moving backwards in this fashion, you can see that part number 4 is the prime and almost sole contributing factor to the overall delinquency. More specifically, insufficient quantities of part number 4 have been started through the manufacturing process. Of course, the prime emphasis in using this or similar techniques is to observe such shortcomings and potential bottlenecks. However, excessive overages which indicate too ambitious a procurement effort or too early an input of in-plant operation may be equally serious.

The interpretation of the information conveyed by the chart must be used with considerable skill and judgment. Often shortfalls or imbalances may be extremely temporary in nature, or due to other factors that may not be as serious as they might appear in purely graphical terms. When shortcomings and future potential delinquencies are observed, an effort can be made to change the program in order to constrict it or otherwise accelerate the rate of completion in order to combat delays. Sometimes this takes the form of changing the testing operations so that they may be accomplished concurrently with subassembly work; sometimes this means on the other hand putting more equipment into the in-plant manufacturing process, which in turn may shorten the in-plant fabrication time for specific parts.

POLARIS BENEFITS FROM LINE OF BALANCE

As the Navy's Fleet Ballistic Missile Program moved into a phase of pilot production, its overall time schedule was speeded up. The result was a need for extremely close monitoring of achievement of the program.

The Special Projects Office of BUORD and the Field Services Division of ONM worked together to organize teams of SP personnel and cognizant Inspectors of Naval Material. Starting with the prime contractor's end item and moving through subcontractor's plants on a highly selective basis, these teams conducted Line of Balance studies.

For example, an initial study was conducted at the Lockheed Sunnyvale plant on the POLARIS Missile. There the Guidance Package was a critical component, and its timely delivery to Lockheed was an absolute necessity. So in turn, General Electric of Pittsfield, Mass., subcontractor for the Guidance Package, became the subject of a Line of Balance study. Likewise, studies were made at plants of the subcontractors who furnished gyroscopes to General Electric, for a controlling component of the guidance system was gyroscopes.

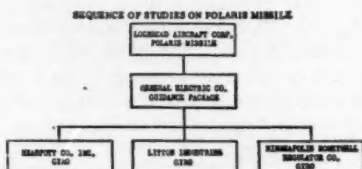
Other components of the program have also been studied—Inertial Navigation Systems

Sperry Gyroscope Company and North American
Aviation Corporation

Motors

Aerojet General Corporation

Launchers Westinghouse Electric Company



Benefits coming out of these studies are clearly recognized—

- (1) Communications up and down the contracting chain are clearly based on facts.
- (2) Actual and potential delays have been highlighted.
- (3) Line of Balance charts became the basic subject material for staff meetings in the Navy and in industrial plants.

Contractors have enthusiastically welcomed the Line of Balance technique, even to the extent of adopting it for other plant projects. As the Fleet Ballistic Missile Program moves into its all-out production phase, Line of Balance studies will continue to furnish the basis for program surveillance.

LINE OF BALANCE CAN MONITOR SINGLE END ITEM PROJECTS

Until the present, most applications of Line of Balance to industrial programs have been to production projects wherein there was a phased objective or delivery schedule which required repetitive accomplishment of the steps of a production plan at a specified rate.

But another common type of industrial program has as its objective the achievement of a single accomplishment at a specific future time. Examples of this include construction projects, manufacture of prototypes, research and development projects, pre-production engineering, and preparation for a military capability. Let's call these Single End Item Projects. Results of some attempts to apply a conventional graphically

constructed Line of Balance to Single End Item Projects have been rather disappointing. The required progress designated by the balance line for the individual phases or elements was far in excess of the progress really required for those phases or elements.

Inherent in the validity of a Line of Balance arrived at by the conventional graphic construction are the assumptions that (1) the required rate of availability for an element or component of the End Item is exactly equal to the required rate of completions for the End Item and that (2) therefore the required availability schedule for any element or component of the End Item leads the required availability schedule for the End Item by a fixed period, normally called the lead time.

Graphically these assumptions mean that the required availability schedules for various elements or components of the End Item are characterized by curves parallel to the corresponding curve for the End Item, leading the latter by fixed lead times. Figure 2A depicts an objective plot of a line of Balance chart for a typical production project, showing the delivery schedule for an End Item plus the schedules of required availability for two components of that End Item.

However, the foregoing is not typical of Single End Item Projects. The curves delineating schedules for accomplishment of the phases or elements of a Single End Item Project are not normally parallel to an over-all objective curve (connecting start and finish time of the overall project) but rather may lead or lag the objective curve at varying degrees of divergency. Figure 2B, an objective plot of a Line of Balance chart for a Single End Item Project, shows the completion schedule for the overall project and the schedules for completion of the phases or elements of that project.

It follows then that Lines of Balance for Single End Item Projects derived by the conventional lead time advance procedure appear to specify incorrect required percent completion of the tasks or phases of the project. In order to arrive at more valid required percent completion levels for this type application, we may plot the schedules for accomplishing the phases

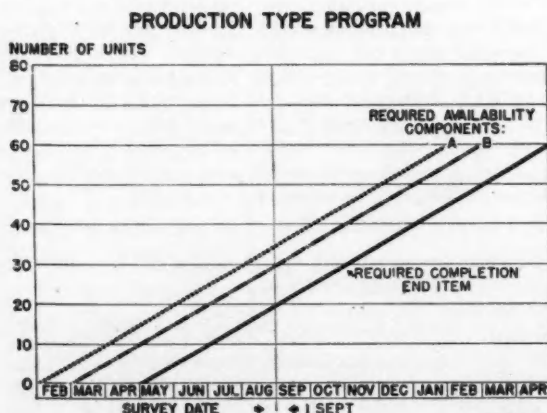


FIGURE 2A

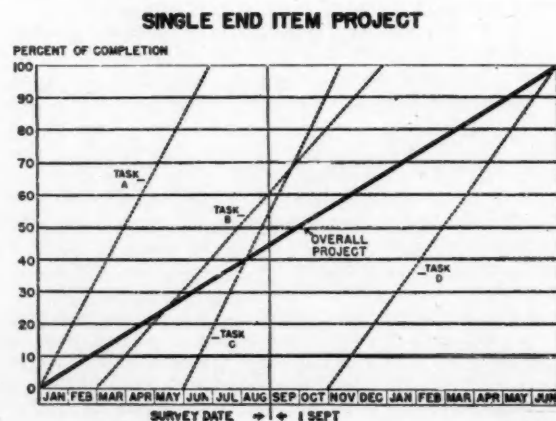


FIGURE 2B

on the objective chart. Then the balance quantity for an individual element, phase or task will be the intercept of its individual schedule with a vertical line, as of the date of study. This, in turn, may be projected graphically to the corresponding bar on the progress chart and the individual balance quantities connected to form a Line of Balance. In this type of application the balance line will not necessarily be a continuously descending line from left to right.

Figure 3 is an example of applying the method to the manufacture of a prototype. The plan is comprised of symbols denoting the start and finish of the various phases or tasks or elements of the project. The start of a phase is denoted by an open symbol, the completion by the same symbol filled in. Here the time base on the plan is set up in terms of calendar dates rather than as working time before delivery, as in the production program application. The schedules for the various phases of the project are lifted from the plan and plotted as straight

lines on the objective chart. (If it is known that the schedules are not linear, and if the curvature is known, then the appropriate curves can be used.) The schedules are keyed by number to the plan and to the progress chart. The Line of Balance in this illustration has been constructed as of 1 February. Obviously there would be zero percent completion of phases 5, 6 and 7 required, for they are not yet scheduled to start (as of study date). The other balance quantities are found by the intercept method described in the preceding paragraph and plotted accordingly.

LINE OF BALANCE AND MANAGEMENT

The technique of Line of Balance is, after all, a rather simple device; but its effectiveness in surveying a wide variety of programs is of real value. It provides a coordinated picture of all the pertinent facts needed for the evaluation of achievement and highlights those phases to which management must give attention for the successful conclusion of a program.

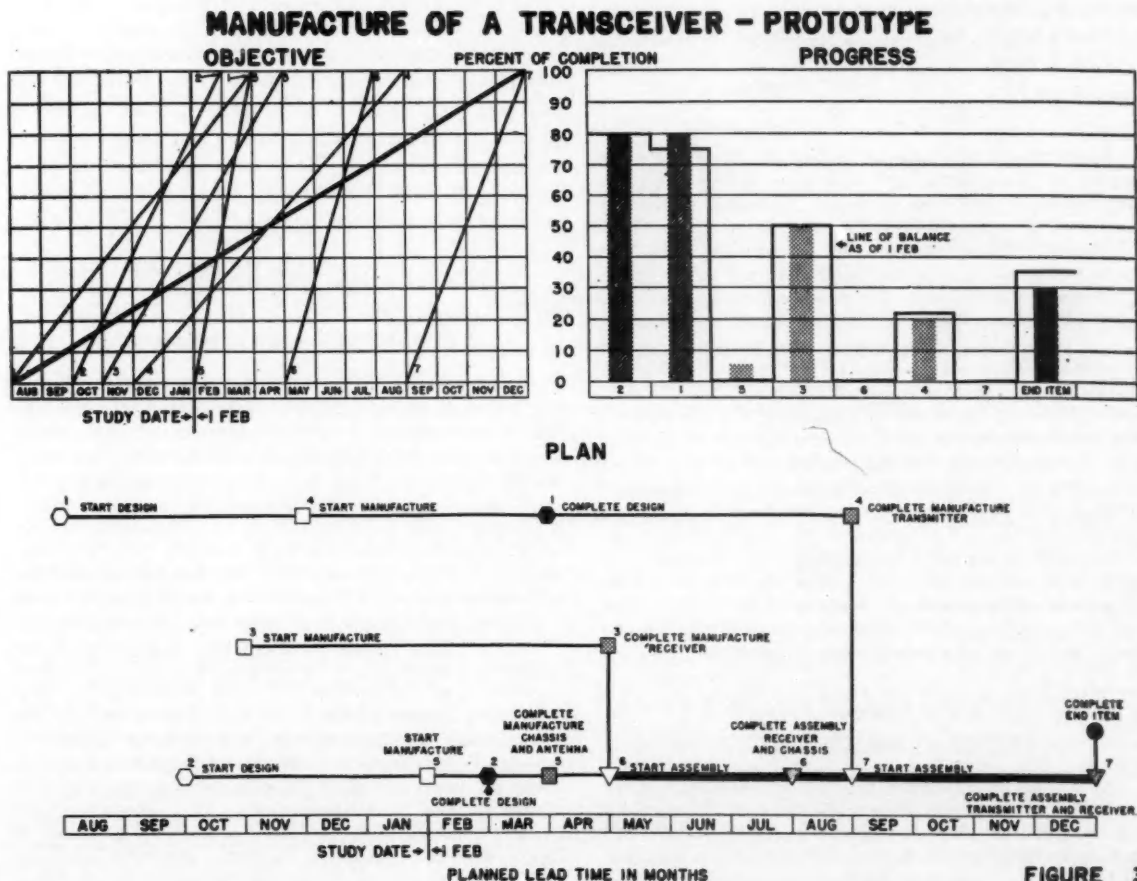


FIGURE 3

STANDARD COSTS

Office of Comptroller Bureau of Naval Weapons

Stewart O. Hovland

STANDARD COSTS SYSTEM

Whether we realize it or not, we all use standards. We have standards of living, standards of conduct, standards of time for accomplishment of tasks; in fact our everyday life is a continuous procession of standards. As an example, we set a standard of time to get to work in the mornings and home in the evenings. If the actual time was more or less than we had established, we analyze the deviation to determine the cause and make the necessary correction. If there was no appreciable variance we give the matter no further consideration. In the foregoing example we have employed the basic principles of Standard Costs. We have pre-determined a base of what the time "should be" rather than what the time "will be". In addition, if there is a variance, we employ the "management by exception" principle in only concerning ourselves with the item which has a variance. This is an extremely oversimplified analogy to point up the desirability of establishing standards or, in the case of industrial enterprises, establishing Standard Costs.

In the March 1959 issue of "Where Do We Stand?", the program of "Fixed Price and Firm Price Billing under the Navy Industrial Fund" was presented. The article pointed up many areas of improvement in present management practices in Industrial Fund operations. Chief among these is the process of billing the appropriation allotments and project orders to reimburse the Industrial Fund without being concerned with the limitations of R. S. 3679. The proper implementation of fixed price billing would remove this restriction because the project order would be billed for the units ordered at the price established. Another important aspect would be the competitive nature of operations in completing a job within the price limit established in the fixed price agreement. As stated in the aforementioned article the principle of fixed price billing presupposes pre-determining costs of goods and services produced within a range of actual costs to make the gains and losses negligible. Therefore, it is imperative that a system be implemented which prices out actual cost against a standard. This management tool will price out variances from standard costs in a manner which is understandable to all levels of management and permit corrective action being taken during the progress of the job on off-standard facets of operations.

ACCOUNTING PRACTICES IN THE FEDERAL GOVERNMENT

As a basis for examining the field of Standard Costs it may be well to first review some of the facets of Governmental Accounting and the changes which have recently occurred. Accounting for Federal funds is at present, and always has been, strictly on a cash basis. The funds are appropriated by Con-

gress, obligated by the Department or Agency to which appropriated, then expended as vouchers are received. In addition, the Navy has a service-wide accounting system by which cost data is gathered on an expenditure account basis, but only as the expenditure is made which may be years after the funds were obligated. Recognizing the need for ascertaining the cost of end items and recording costs as they are incurred, working capital funds were authorized by Public Law 216, 81st Congress. The Working Capital fund concept provides a basic accounting structure from which businesslike management techniques can be developed. By the use of an activity operating budget for the fiscal year, the amount of funds to be expended by an activity are ascertainable; not how much will be obligated. In addition, it is now possible to ascertain how much an end item of production or a service will cost after all the indirect costs are considered.

A further application of businesslike techniques to government operations is the recent implementation of fixed and firm price billing procedures to Navy Industrial Fund activities of the Bureau of Ordnance. This procedure provides that customer orders of \$50,000 or less may be established at a fixed price. Orders in excess of \$50,000 may be negotiated after 50% completed and established as a fixed price order.*

SOME RECENT ADVANCES OF THE BUREAU OF ORDNANCE IN THE FIELD OF FINANCIAL MANAGEMENT

The Bureau has made some striking advances in improved financial management, subsequent to the passage of Public Law 216, which emphasized businesslike financial management operations in Government activities. In 1951 the Bureau converted the Naval Ordnance Plant, York, Pennsylvania to Navy Industrial Fund Financing by establishing a commercial type accrual accounting system and providing the activity with a working capital fund. Since that time eight activities have been converted to this type financing with NTS Keyport scheduled to be converted subsequently. In addition, the Modified-Industrial concept has been applied to all other major Bureau activities; a concept which involves the application of overhead to the productive expenditure authorizations. The Modified-Industrial procedure does not encompass accrual accounting but does give a fairly accurate picture of the cost of goods and services. To accomplish the application of overhead to operations it is necessary to "pre-determine" the amount of indirect costs that will be generated throughout the year and "pre-determine" the number of direct labor hours to arrive at a "pre-determined" overhead application rate per direct labor hour. Therefore, it requires the Field Activities to budget or plan their operations for the entire fiscal year. Along with the acquisition of experi-

* NAVORD INST. 7600.6, Fil-b dated 12 Aug 1959, Subject: Fixed price estimates and firm price agreements by industrial funded stations; procedures concerning.

ence in the field of business budgeting this has also developed "cost consciousness" within station management. In addition, the Bureau has instituted numerous other management improvement techniques, all of which tend to develop a sharper realization of the necessity for pre-planning. Some of these are:

(1) The extensive work accomplished in the field of establishing labor standards by time and motion studies,

(2) The implementation of an integrated production, planning and control system with a job order cost accounting system,

(3) The important developments that have taken place in the application of accounting and production control data to Electric Accounting Machines,

(4) Extensive education and orientation in financial review programs at field activities, primarily in the area of comparing actual production costs with budgeted costs.

The foregoing background indicates that the Bureau management improvement programs have now furnished the vehicles whereby a more sophisticated industrial type management tool can be implemented. There have been time standards, cost accounting, production scheduling and review and analysis programs developed which in conjunction with the timeliness of machine data processing, give us all the essential elements of developing a Standard Costs System.

GENERAL APPLICATION OF STANDARD COSTS

The comparison of actual costs to budgeted cost has two distinct advantages. The budgets are prepared so far in advance of the actual production that current costs have changed. In addition, the actual costs as they are obtained from the cost accounting system contain all the waste and inefficiency that has occurred during the operation. The only way the waste and inefficiency can be detected is to have a "yardstick" that establishes what the costs should be if the waste and inefficiency were not present. Therefore, we relate the "yardstick" to the statement that the Standard Costs concept is pre-determining the cost of a product or service efficiently produced in an efficient plant at a fixed volume. Without going into the mechanics of Standard Cost Accounting it is important to note that it involves the predetermination of "standard" direct material costs, "standard" direct labor costs and "standard" overhead costs. Variance Accounts are established which compare actual costs against the standard costs as the work is progressing. The variance accounts provide the data analysis and presentation of off-standard situations to management on an exception basis. A Standard Costs System will provide management with the component costs of production of goods or services based on a monetary standard so the monetary significance of deviations from standards are understandable to all levels of management. Some of the more commonly used variance accounts are (1) Direct Material Quantity (2) Direct Material Price (3) Direct Labor Quantity (4) Direct Labor Price (5) Overhead Volume (6) Overhead Efficiency and (7) Overhead Budget. These variance accounts can be expanded or contracted to

suit the needs of management. As the actual costs are compared with the standard costs, variances may or may not become evident. If they do become evident they are called to the attention of management so that immediate corrective action may be taken. Examples of the variances which commonly occur may indicate that (1) more material is being used than planned because of poor machine operations or inexperienced operators (2) higher skilled labor being used on the operation than necessary for the task, (3) more labor time being employed because of bad location of material or machines (4) overhead costs not being absorbed because of reduced volume of operations. The most important aspect is that management take swift action to determine the reason for the variance and institute corrective measures.

Types of Standard Costs Systems

As we have previously stated the Standard Costs System concept is the pre-determination of costs of goods or services. A "model" of performance before the fact. As the performance is accomplished it is measured against the model by the previously discussed variance accounts to determine how close actual performance is to the efficiency built into the model. The question arises regarding efficiency criteria. Therefore, we have varying criteria of standard costs efficiency known as:

Ideal Standards

Current Standards

Average Past Performance Standards

Bogey Standards

The Ideal or Theoretical Standards Costs are those costs which would be incurred if the goods or services were produced in an ideally appointed plant operated by the most skillful employees with overhead costs ideally related to capacity volume. Obviously this standard would not be attainable by any plant but would be the ultimate goal of production. This standard is generally considered as not being too desirable for ordinary use because its unattainability has an adverse effect on employee morale. Therefore, this standard would not be suitable for installation at the Bureau NIF stations. The other extreme of standard is the Average Past Performance Standard. This standard is so loose that one is taking liberties with the word by calling them standards. These standards are based on past performance and contain all the waste and inefficiencies included in the past performance costs. This standard would not be applicable to the Bureau activities because they do not have enough similar jobs to create any significant past performance history. In addition, this is a standard now used by the activities in their budgeting procedures except they are not part of the accounting procedures and no variance accounts are established. The Bogey Standard is established by using those costs which are pre-determined the first time the product is manufactured or the service performed. These bogey costs are then adjusted by an index factor to a current standard to which comparison of actual cost is made. The base of bogey standard costs furnish a long-run "bench mark" for measurement of increased costs and major fluctuation. While the bogey standard

has considerable merit it also entails considerable bookkeeping and mathematical calculations. The bookkeeping and mathematical calculations tend to make it undesirable.

The current cost standard appears to be the one most suited to BUORD NIF operations. This standard is considered to reflect the cost of producing the end item or service based on current costs. Most of the jobs at the NIF stations are small one-time jobs so the standard costs may be developed for each job. This would not preclude the use of other standards where long-run operations are performed. Current standards are "pre-determined" by the best available means, something more stable than just estimates on past performances. The basis for labor standard costs at BUORD stations is the engineered or estimated labor time and the average labor rates. The basis for material standards is the Bill of Material priced at the best estimate available.

The overhead costs should be related to the volume of production by a flexible budget. This budget will reflect the reductions of indirect cost as the volume decreases and vice-versa. The applied rate would be established by the number

of direct labor hours, which reflects the volume of operation at any given time. As the volume changes the applied overhead rate will change. The current standard will then reflect the best pre-determined cost to produce goods or services at current prices.

THE BUREAU'S PLANS FOR STANDARD COSTS APPLICATION

The Bureau plans to issue an instruction to its Navy Industrial funded activities requesting the station personnel to familiarize themselves with the concepts of the Standard Costs System. It is further anticipated that NOP York, Pennsylvania, will serve as a pilot installation for implementation of a Standard Costs System and a vehicle for the indoctrination of personnel from other activities. To accomplish the installation and use of Standard Costs will require the utmost in cooperation of Bureau and Station personnel, but it is sincerely believed that the ultimate gain will offset the effort involved. It is essential that we use every means to produce and provide the best Fleet support at lowest possible cost.

Editors Note: Any reference to Bureau of Ordnance shall be construed to mean Bureau of Naval Weapons.

REPRINT FROM THE MILITARY CONTRACT PROCEDURES LETTER OF 1 APRIL 1961

Contractors and Congress are getting some unexpectedly fast results from their prodding and complaints about military procurement practices that actually hold up work, make it difficult for private firms to do business with the government.

Partly as a result of contractor complaints to Congressional committees, partly because of stinging comments by the committees, and partly because of individual lashings delivered by Senators, here's recent action that'll be of interest to you:

1. Defense department has rescinded orders (in effect since late 1957) which provided for withholding 20 percent of costs incurred by contractors on various types of cost-plus contracts. Net effect could be release of \$175 million of funds in government hands now.

2. Air Force has moved fast to reshuffle its material and Research and Development procurement organization, in line with recent sharp Congressional criticism. Key is a newly-activated Air Force Systems Command, headed by Lt. Gen. Bernard A. Schriever.

And there'll be more, under prodding. Note that Senator Douglas, Congressmen Hebert, McCormack and Curtis, the Comptroller General, Secretary of Defense and Budget Bureau have been huddling for some weeks to "discuss steps to bring about greater efficiency and economy in defense procurement and logistics management." These huddles should bring some answers to constant charges of waste and inefficiency levelled at the military departments by Senator Symington, the General Accounting Office, and others.

The two major developments are certainly equally important to readers of this letter, and as pointed out, they are very much related. But hey have to be described separately, so that you can see the details and how the effect will come down to your own operations.

Withholding ends with new order—To be exact, the order on withholding of payments is DOD Directive 7800.6, and was dated Nov. 1, 1957. It provided for withholding 20 percent of costs incurred by contractors performing certain categories of cost-reimbursement contracts, until end items were delivered, or certain specific increments of work had been performed.

This order is now rescinded, by Roswell Gilpatric, deputy DOD secretary. Here's what Gilpatric's order means:

- a. On future contracts, contractors will be paid in full for their incurred costs, as they accrue; (b) the military departments are now authorized to pay present contractors the amounts currently deferred—to the extent that these contractors are willing to renegotiate their fees.

Back of the change is the complaint that contractors have been forced into borrowing money in order to fund the 20 percent of their costs which the government withheld, thus interest charges on such loans were an added expense which eventually cost the government (as well as the contractor) money, anyway. This was a subject of bitter Congressional comment when military appropriations bills were grinding through last year—and it was in fact on the "urging" of Congress that the restudy of the policy, and the rescinding of the withholding requirements is based.

To see whether any of your present contracts—or any future ones—fall into the category that can get you full payments, here is the requirement:

The policy of withholding has applied to all cost-fixed-fee contracts, except (1) those where the contractor received no fee or profit; (2) those with educational institutions or non-profit organizations; (3) those solely for operation of government-owned plants; (4) contracts with small business where withholding would have worked undue hardship on the contractor, or adversely affect the government's interest.

GOLD ON THE LOOSE!

Major Floyd P. Coyne, FC

ABOUT THE AUTHOR

Major Floyd P. Coyne is currently assigned to the Finance Corps Board in Washington, D. C. His previous assignments have included Assistant Finance Officer, Ft. Dix Separation Center; Staff and Faculty, Finance School, U. S. Army; Comptroller and Budget and Fiscal Officer, Greece. Major Coyne is a graduate of Finance OCS and holds a BA Degree in Economics from Penn. State Univ. and an MA Degree in Business from the Univ. of Pittsburgh.

I am certain that all parents have been subjected to countless questions posed by their children—queries which were very naive and yet very profound. Several days ago my eleven-year-old son had been reading the local newspaper and as I glanced at him his wrinkled brow led me to believe that one of his bombshells was ready to drop. And here is what he hit me with: “Daddy, if President Roosevelt took our country off the gold standard back in the 1930’s, why are we so worried about our loss of gold in the past several years?”

As you might well imagine, to answer a question such as this would be no mean task if asked by an undergraduate student of economics . . . at any rate, I fumbled through an answer of sorts and hoped that my son still retained a bit of confidence in his “old man’s” intelligence. In so doing, I began to feel that perhaps the time was now ripe to clarify a few points regarding gold flows and the United States balance of payments, subjects which have occupied much space in newspapers and periodicals during the past several months. I have always believed that Finance Corps personnel *must* keep abreast of events such as these, for when we wear the diamond this means to our commander that we are knowledgeable in all areas having financial implications—the “old man” will *expect* us to know those things, and if we *do* we will certainly enhance our professional status and the prestige of the Finance Corps. This is the reason for being of this little article . . . it is an attempt to explain in rather simple language the rather involved problem of balance of payment deficit of the United States and the resultant gold flows of recent years.

HISTORICAL BACKGROUND

The problems which confront the United States today regarding balance of payment deficit are not new. We have been incurring such payment deficit in every year since 1949, with the exception of 1957. As a matter of fact, from 1950 through 1959, foreign countries have added approximately \$18½ billion to their gold and liquid dollar holdings in the United States—\$13½ billion in dollar credits (readily convertible into gold) and \$5 billion in gold. Historically, the United States has been supplying vast quantities of dollars to foreign nations since World War II. These dollar outflows, generated primarily

through economic and military aid programs, first relieved and then reversed the post-war dollar shortage. Data recently released by the United States Department of Commerce reveal that the total volume of overseas expenditures of the United States Government over the past 15 years have reached the tremendous total of approximately \$110 billion; this figure includes cash military outlays, military grants, economic aid, loans to foreign governments and subscriptions to international financial agencies. Of this total, more than four-fifths has been in the form of cash military outlays abroad and military and economic grants.

For the past ten years, foreign countries have succeeded in raising output and productivity and restored fiscal and monetary order, with the result that the dollars supplied by the United States have enabled much of the world to rebuild their monetary reserves. Significantly, for the past three years this buildup of foreign monetary reserves has entailed balance of payment difficulties for the United States—deficits for these years have been running around \$3 billion per year, and the deficit for calendar year 1960 will probably approximate \$4 billion. Since deficits are normally settled by transfers of gold and/or dollars to foreign nations, and since these foreign nations have requested gold in recent years, the problems of gold flow have now been brought prominently to the center of the stage. In 1958, for example, foreign nations used about two-thirds of their newly acquired dollar credits to buy gold from the United States, and recently they have been increasing their gold conversions—from 1 July through 31 October 1960, our gold stock declined by approximately \$850 million, and during the month of November 1960, a further drop of \$492 million was experienced in our gold coffers. As will be indicated later in this article, this gold and dollar outflow does *not* stem from a United States trade deficit . . . in all probability for 1960 our commercial merchandise exports will exceed our merchandise imports by approximately \$4 billion.

Before proceeding to a brief discussion of the balance of payments and remedies proposed currently by our Government to overcome deficits, one question pops up: “Why the recent alarm about our payments deficit if such has been going on for ten years?” (Sounds like another query from my inquisitive son.) I feel this question can be answered because of these facts: first, in the past three years our deficit has averaged more than double the average of the seven previous deficit years—approximately \$3.5 billion as against \$1.5 billion. Secondly, in very recent years, and particularly in 1960, foreign countries have been bringing home their dollar credits in the form of gold, thereby reducing the United States gold stock . . . in November 1960 our gold stock dropped below \$18 billion, reducing it to its lowest level in 20 years. Lastly, the fact that all this information has been given much publicity in newspapers and magazines has made the public very cognizant of its existence. I venture that relatively few people in the United States

had ever heard of the balance of payments until 1960, economists and students of money and banking excepted.

BALANCE OF INTERNATIONAL PAYMENTS

The balance of payments is simply the statement of a country's international accounts in the forms of credits and debits, normally covering a period of one calendar year. The United States Department of Commerce has published the U. S. balance of payments each year since 1919, and figures are also accumulated monthly in the *Survey of Current Business*, a Department of Commerce publication. Likewise, balances of payments for countries which are members of the International Monetary Fund are published monthly in *International Financial Statistics*, an organ of this organization—and the *Balance of Payments Yearbook* accumulates these figures on an annual basis.

Accompanying this article is a skeletonized version of our balance of payments for calendar years 1959 and 1960... you will note that the figures for 1960 have been raised to an annual basis based upon experience for the first nine months of 1960. Since publication of these figures by the Department of Commerce certain recent events lead me to believe that our deficit for 1960 will approximate \$4 billion, rather than \$2.9 billion as shown opposite the line "excess of transfers over surplus on trade and services."

The source of information for the millions of individual and governmental transactions contained in our balance of payments are many and varied; to name but a few, dollar valuations of merchandise exports and imports are normally reported to the Department of Commerce by customs authorities who assess price tags at ports of entry, commercial bank reports private financial transactions, gold flows are reported by the United States Treasury Department and the Board of Governors of the Federal Reserve System, foreign aid transactions are reported by the International Cooperation Administration and the Department of Defense, etc. Since there are many transactions which escape reporting authorities from time to time, and this is particularly true of capital transactions, you will notice that a line entitled "errors and omissions" is used to balance the account. Although students of conceptual accounting might frown upon such a procedure of forcing a balance, nevertheless this is the best tool which we possess for determining just how well a nation is doing in its international transactions... the fact that a tool is not perfect should certainly not negate its usage. Suffice to say that if *all* transactions passed before the eyes of a reporting agency and were reported accurately there would be no need for such a balancing entry.

You will notice as you scan the balance of payments that certain items are plus items and other bear a minus sign. The plus items are credit entries in the account—they are the items which should result in a flow of funds into our country and they are the transactions which give the United States claims for payment against foreigners. Further, credit transactions provide us with foreign currencies of bills of exchange denomi-

nated in terms of foreign monetary units. The minus items are debit transactions—transactions which should eventuate in a flow of funds out of the United States; such transactions give foreigners claims against residents in our country and tend to deplete our supplies of foreign currencies which were generated previously as the result of credit items.

Typical credits would include transactions such as merchandise exports, services rendered to foreign nationals (banking, transportation, insurance, etc.), interest and dividend receipts from abroad, expenditures by foreign tourists in the United States, etc. Obviously the debits would be transactions in which something is furnished to us by foreigners—such as imports of merchandise, services rendered to us, interest and dividend payments which we owe abroad, expenditures of our tourists in foreign countries, military expenditures in overseas areas and foreign aid program.

In essence, then, a balance of payments is simply an unusual type of balance sheet; for every credit item in the account there must be an offsetting debit item and vice-versa. Thus, if we export merchandise to a British wholesaler (credit merchandise exports) he may make payments to the United States exporter by simply paying the latter's bank in London (debit short-term capital). Although, at times, it is difficult to detect just where the offsetting entry occurs, nevertheless, it *does* occur.

To clarify the idea that a balance of payments must always balance, allow me to cite a little analogy. You or I, in any one year, can spend more than we earn if we are able to borrow the difference, draw upon previously accumulated bank balances or savings bonds, receive monetary gifts or repudiate the debts we have incurred. Similarly, entire nations often spend more than they earn in the current year by borrowing abroad, drawing upon accumulated international bank balances, disinvesting, receiving foreign aid to bridge the gap or by shipping gold. So it becomes apparent that the balance of payments must balance, for in the final analysis during a particular year's experience a creditor nation will grant loans, accumulate bank balances, grant aid or receive gold, whereas a debtor nation will find that it will have to resort to activities which are the opposites of these.

A glance at the 1960 balance of payments of the United States reveals certain interesting facts. First, we are a creditor nation insofar as the merchandise and services account is concerned in 1960... to the tune of \$4.9 billion. However, because of the huge volume of Government transfers and the inordinately large outflows of private capital, in all probability we will show a deficit in the overall balance of payments of around \$2.9 billion—my personal opinion is that the figure will approximate \$4 billion when the final results are made known. Thus, these are the reasons for our gold flows and the accumulation of foreign dollars—you see, we simply had to make payment abroad in the form of gold and dollar credits. Why? Because our merchandise and services exports were simply not large enough to carry the weight of our vast commitments abroad and the private capital outflows to overseas area. Finally, it should now be

clear that the fact of balance in the balance of payments is meaningless in and of itself; however, the *means* by which the balance is achieved is of prime significance, for *this* determines whether or not an actual deficit results.

CURRENT DEVELOPMENTS

The remedies that have been proposed by our Government to rectify the deficit will certainly go a long way toward relieving imbalances in our international accounts; thus, measures announced in November of 1960—such as the reduction in numbers of overseas military and civilian dependents, prohibitions against sales of foreign goods in military facilities, tying foreign aid programs to U. S. manufactured goods, insistence upon our allies paying more of the cost of foreign aid and troop support—will surely help somewhat in reducing gold losses and dollar drains. I feel, however, that the *permanent* solution to our deficit problem lies in boosting our merchandise exports and urging foreign nations to ease their tariffs and other restrictions on U. S. products. Take a look at the balance of payments again, and note that merchandise exports are by far the largest item in this account. A positive approach would seem to dictate an aggressive program in this area—a program which would make our goods and services more competitive than ever in world markets... but this is a story in itself and is beyond the scope of this article.

I sincerely hope I have thrown some light on this most fascinating subject... I must repeat that we Finance Corps personnel are obligated to understand problems such as these since we are *expected* to have answers when financial implications are involved. Perhaps I shall let my son read this little article now—there's nothing like confusing the little fellow.

U. S. BALANCE OF PAYMENTS (Billions of dollars)

	1959	1960*
Merchandise exports	\$16.2	\$19.1
Merchandise imports	-15.3	-15.1
Trade surplus	0.9	4.0
Services rendered	7.2	7.3
Services received	-5.9	-6.4
Service account surplus	1.3	0.9
Surplus on trade and services	2.2	4.9
U. S. Gov't transfers		
Military expenditures	-3.1	-2.9
Economic grants	-1.6	-1.7
Loans and credits (net)	-0.4	-1.1
Subtotal	-5.1	-5.7
Private capital outflow	-2.3	-2.8
Private capital inflow	0.5	0.7
Net private capital	-1.8	-2.1
Total Gov't and private transfers	-6.9	-7.8
Excess of transfers over surplus on trade and services	4.7	2.9
Settled by:		
Gold sales to foreigners	0.7	1.1
Increase in foreign short-term assets	2.4	2.4
Increase in foreign holding of U. S.		
Gov't securities	0.7	0.1
Foreign capital and gold	3.8	3.6
Errors and omissions	0.9	-0.7

*Estimates for first nine months
raised to an annual basis.

Source: U. S. Department of Commerce

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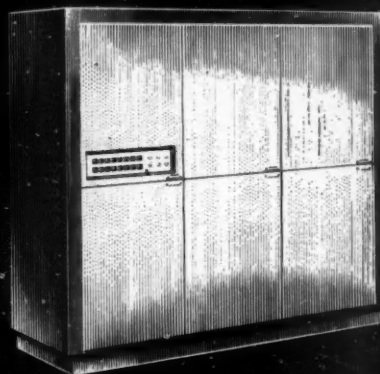
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